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THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

FARMING CAPITAL.

The success and profits of farming depend very much upon the command of farming capital, and upon its judicious application. We have not now reference to that system of exhausting husbandry,—which has seriously impoverished the old cultivated districts of our country, and which is fast impoverishing those more recently brought under culture—but to the *new* system, which not only aims at the largest profits upon the outlay, but keeps in view the *augmentation*, or at least the *preservation*, of the natural fertility of the soil. It is easier to *preserve* fertility, than to *restore* it to a soil which has become exhausted by injudicious cropping.

There are two prominent faults in American farming—we cultivate *too much land*, for the capital employed—and in the second place, we do not take the right method of preserving fertility, by alternating crops, and by blending cattle with tillage husbandry. The consequence of the first is, that none of the land is so *well*, or *profitably* cultivated as it ought to be. By keeping a portion of our land under the plough, and almost wholly in grain crops—and another portion in "natural" meadow, the profits of culture are constantly diminishing, and the land is ultimately "*worn out*;" while the deterioration is accelerated by the want of farm stock to convert the forage into manure, and the want of economy and judgment in saving and applying the little manure that is made.

To *keep* land in good heart, or to *augment* fertility, it is essential, among other things, to consume the main products upon the farm, in order that the dung, which the farm stock makes, shall *keep the land rich*;—that the land be *well drained*, that it may develope all its resources, which it can never do if water reposes either upon, or within eighteen inches of the surface;—and that it be *kept clean*. All these matters, as farm stock, draining, and clean tillage, require labor and capital. Instead, however, of laying out the profits of a farm to keep it good, or improve its condition, these profits are generally applied to the enlargement of its size, to speculation, or to some purpose foreign to the preservation of fertility, or to the improvement of the soil.

The capital required for the profitable management of a farm, depends much upon the quality of the soil, the nature of the husbandry which is adopted upon it, and the state of the market. It is a well established fact, that farm stock can be purchased cheaper, and labor and every thing else had upon better terms—for CASH, than on CREDIT. And it is equally a self-evident proposition, that he who is *obliged* to sell the products of his farm, to meet current expenses, seldom obtains so fair a price, as he who can choose his time and his market for the sale of his produce. The farmer, therefore, who keeps the *ready means* in reserve, that he may buy and sell when it best suits his interest, has a manifest advantage over him who buys upon credit, and sells from necessity. But it is principally in reference to the *improvement of the farm*, and the consequent increase of the profits of the labor which is bestowed upon it, that farming capital is particularly desirable. If, by a moderate expenditure in making land rich, and dry and clean, we can double its products, we effect a saving of one-half of our labor; or, in other words, we obtain as much from the fifty *improved* acres, as we do from one hundred acres in the old way, and with half the labor.

As pertinent to this subject, we subjoin some extracts from British Husbandry, persuaded that the remarks they contain apply to American with almost as great force as they do to British husbandry.

"There is no mistake more common," says our authority, "than that of supposing, that the more land a man holds, the greater must be his profits; for the profit does not arise from the land itself, but from the manner of using it: the best soil may be made unproductive by bad management, while the worst may be rendered profitable by the opposite course; *but without sufficient capital no land can be properly cultivated.* There is nothing to which capital can be applied with greater certainty of a fair return for its liberal expenditure, when correctly employed, than land; but, on the other hand, there is nothing more ruinous, when the capital is either insufficient, or injudiciously laid out. In fact,—assuming always that the expenditure be directed with judgment—it will be found that the profit upon the outlay increases, *in more than a proportionate degree to its amount:* thus, supposing five pounds to be the lowest, and ten the highest sum that can be employed in the common culture of the same acre of land, it is more than probable that, if the five pounds return at the rate of ten per cent, the ten will yield twenty, or any intermediate sum, at the same progressive ratio. Now, admitting that to be true,—and it is presumed that no experienced agriculturist will doubt it,—it follows, *that* 1000*l. expended in the cultivation of* 200 *acres, will only yield a profit of* 100*l. while, if applied to no more than* 100 *acres, it would produce* 200*l.;* wherefore, although a farmer of limited capital may not be driven to the extremity we have already supposed, [distress, duns and final ruin consequent upon deficiency of stock, imperfect tillage and scanty crops,] and although he may be able to carry on his business with a certain degree of advantage, it is yet evident that *his profit would be increased by diminishing the quantity of his land.* Many a one has been ruined by a large farm, who might have acquired a competency with one of half the size. It therefore behooves a man to weigh well the charges with his means, and not allow himself to be seduced by any ideal prospect of gain, into the imprudence of entering upon a larger farm than his property will enable him to manage with the spirit necessary to ensure success.

"Much larger capital than was formerly requisite has become indispensable since the general adoption of the alternate system of husbandry; for the foundation of that system, and of all good farming, is the support of more live stock than was possible when the land was brought round to the reproduction of corn [grain] by means of repeated fallows, instead of green crops. The charges, being thus confined to those incidental to mere tillage, were comparatively light; whereas, now, there are arable farms without an acre of pasture, except perhaps a paddock for cows, on which live stock is kept to an amount far beyond the sum required for cultivation. But the produce is proportionally large; and more corn and meat are obtained from inferior soils in Norfolk, and other counties where the same plan is pursued, than from some of the best land in the kingdom under less spirited management. It is quite manifest that the more cattle and sheep are well maintained upon any given space of ground, the better will it be manured; and therefore, of two farmers, each possessing the same quantity of land, and devoting the same portion of it to grain, he who can support the most live stock, will not only realize the customary profits of that stock, but will also grow the most corn.

"Except in situations where extraneous manure can be procured, it is only by the union of feeding and tillage, that land can be retained in a high degree of fertility. Were the system, therefore, more generally adopted—especially on poor soils—of laying down a considerable part to grass, there can be no doubt that, if again broken up, its productive powers would be found improved, through the meliorating effects of pasturage and rest; and while the gross produce would be thereby ultimately increased, it would so far diminish the expenses of labor, as in many cases to counterbalance the cost of the stock. The farmer who has the means, as well as the discernment, to make some of the various branches of grazing, or the dairy, an essential part of his business, and thus nurses a portion of his land, preserves the tillage in constant heart with the additional manure; and although the gross amount of corn produced may be less than if more ground were under the plough, yet the acreable produce will certainly be greater, and the deficiency will more than be made up by the supply of cheese and butter, and of flesh. He also divides his risk, so that, in the event of an unfavorable harvest, the loss upon his crops will probably be reimbursed by the profit on his cattle. It is a common observation, that graziers and dairymen are the most regular rent-payers; to which it may be added, that the bane of all necessitous farmers, and the ruin of land, are under-stocking and over-cropping.

"The multitude of circumstances to be considered,—each in some degree varying upon every farm, and with every farmer—preclude the possibility of forming any calculation that would be precisely applicable to every case; but, presuming the *land to be of medium quality*, and under an ordinary course of cultivation, the live stock to be of a good description, and the implements new, the requisite amount cannot be computed at less than from 7*l.* to 10*l.* per acre. Less might perhaps *do*, and in many cases no doubt is *made to do*. An active, intelligent man, who watches opportunities for picking up bargains of stock and implements, who is in tolerable credit, and is ingenious in devising expedients to supply the

want of cash, may contrive to get through where one of less acuteness would fail."

In order that the readers of the Cultivator may form an idea of the capital deemed necessary in Britain to manage a farm with spirit and profit, we well give an abstract from Prof. Low's estimate. It is made for a farm of 500 acres, and embraces all the expenses that would be required by an in-going tenant, or a person beginning farming operations, for eighteen months, till he is certain of being able to realize capital from the sale of the products of the farm. The estimate is also predicated upon a five years' rotation, during which each and every department of the farm is successively in fallow and fallow crops, grain, grass and pasture. As a detail of these crops for a year will afford our readers a tolerable idea of Scotch farming, and of their system of rotation, we copy it entire:

"1st. 100 acres in corn, namely, oats.

"2d. 100 acres in fallow, fallow crops and tares, viz:

60 acres in turnips.
30 acres in summer fallow.
5 acres in potatoes.
5 acres in tares.

100 acres.

"3d. 100 acres in corn, with which are sown clover and rye grass seeds, namely:

60 acres in barley after turnips.
40 acres in wheat, after summer fallow, potatoes and tares.

100 acres.

"4th. 100 acres in young grass, namely:

28 acres for hay and green forage.
72 acres for pasture.

100 acres.

"5th. 100 acres in grass in its second year for pasture.

"Under this system of management the crops will succeed to each other in the order mentioned; and the farm will in every year be in five divisions, namely: 100 acres in oats; 100 in fallow, turnips, potatoes and tares; 100 in wheat and barley; 100 in young grass; and 100 in grass in its second year."

Two things are observable in this course: no field is subject to tillage more than *three* years in succession; and no field remains in grass or pasture more than *two* years in succession.

To begin to manage such a farm, under such a rotation, requires a capital, according to our author, of £3,841 11 6, exclusive of rent, to be expended as follows:

1 Implements,	£473	7	4
2 Live stock,	1,423	15	0
3 Seeds,	273	18	0
4 Manures,	516	10	0
5 Labor, &c.	528	17	6
6 Maintenance of horses,	243	9	11
7 Burdens, (as taxes, &c.)	31	15	9
	£3,491	11	6
To this sum should be added the expense of furnishing a dwelling-house, £200			
Family expenses for 1½ years, 150			
	350	0	0
	£3,841	11	6
Deduct stock and produce which may be sold during the 1½ years,	995	17	9
Nett capital required,	£2,845	13	9

Or at the rate of £5 13 10 per acre, equal to $24.42.

"A want of the necessary funds," says Low, "is often more injurious to a farmer, than even an obligation to pay a high rent. With an inadequate capital, he is impeded at every step. He cannot render justice to his farm, he must often bring his goods prematurely to market to supply his wants, and he will pay largely for the credit which he is compelled to seek. The farmer who has ready money at his command has, like every other trader, a great advantage over one who is forced to seek credit, and will be enabled to make a profit of many transactions on which the other would sustain a loss."

We find in the last *Farmers' Cabinet*, a notable instance recorded, of the profitable application of capital, in *improving worn-out land*, very apposite to our subject. The writer is one of the Society of Friends, and resides near Wilmington, in the state of Delaware. The experiment and outlay were made upon a *worn-out field*, which had yielded only "seven bushels of corn to the acre," and the whole amount of verdure which grew upon the field when it came into the possession of the writer, "appeared insufficient for half a dozen sheep the summer season." The following is an exhibit of the expenditure and products for three years, as copied from the Farm Ledger:

1835. *Field No. 3.*	*Dr.*	1835. *Per contra.*	*Cr.*
1st. 1 mo.		300 bu. corn, at 80 cts.	$240 00
500 bushels lime, at 20 cts.	$100 00	175 bu. potatoes, at 30 cts.	52 50
150 cart loads manure, at $1.25 per load,	187 50	1836.	
200 bushels of bone dust, at 30 cents per bushel,	60 00	96½ bu. wheat, at $2,	193 00
100 bushels of ground oyster shells,	15 00	10 loads of corn fodder,	15 00
75 cart-loads of manure, at $1.25,	93 75	9 loads of wheat straw,	18 00
Clover and timothy seed,	12 00	3 months pasture for 8 cattle,	24 25
15 bu. seed wheat,	22 50	1837.	
Cost of ten acres of land,	480 00	31½ tons hay, at $14,	437 50
	$970 75		$980 25

"The interest account against the field," says the writer, "is not carried out, but the second crop, now growing, will considerably more than balance it, leaving the field to stand against the labor of cultivating three crops, and taking them to market. It well be seen that the profits of this operation have all grown out of the manure."

The principles of improved farming, which the preceding facts and estimates are intended to illustrate and inculcate, are,

1. That capital is requisite in the spirited and profitable management of a farm; and that it ought not to be diverted to its enlargement, or to extraneous matters, until the cultivated part is brought to its most productive bearing.

2. That farm stock is necessary, not only as a source of profit on account of the meat, milk and wool which they yield, with comparatively little labor,—but as a source of fertility to the soil which no good farmer can or will dispense with. And,

3. That alternation of crops, as grain, grass, roots and pasture, form the true basis of good husbandry.

LIVE FENCES,

Are annually becoming more and more a matter of interest to the American public, particularly to the farmers of the Prairie West, where there is already a scarcity of timber land. Our fencing timber is rapidly diminishing, and but a small portion of our country is furnished with stone for fencing purposes. Live fences, therefore, must be sooner or later resorted to, as a matter of necessity, and they may be resorted to, we are persuaded, as matter of ultimate economy, in districts where fencing timber and stones are scarce or dear. Caleb Kirk, of Delaware, to whom we have before adverted as the writer of some excellent essays upon hedges, states in one of his essays, that an Englishman, located in his neighborhood, was in the habit of contracting to plant and take care of thorn hedge till it became an efficient barrier to cattle, receiving his pay as the work progressed, at *one dollar the rod*. In a period of twenty years, therefore, the live fence would cost much less than the dead fence, with the advantage to the former superadded, that at the end of the twenty years, the live fence would be complete, and in order, while the dead fence would be required to be rebuilt with a new outlay. We are satisfied, from our own experience and observation, that we have abundant materials, in the indigenous growth of our country, for live fences, and that we can, after we have profited more from experience,—and the sooner we acquire this the better,—advantageously employ them in growing live fences. The greatest bar to our progress in the business is, *want* of *patience*, and a just perception of our ultimate interest. If we could grow live fences as readily as we can construct dead ones, there would be no hesitation in resorting to them, however expensive. But the idea of devoting six or seven years to bringing them to perfection, *perhaps longer than our natural lease of life*, deters many from planting hedges, as it does fruit and ornamental trees. The object of the parent is almost invariably, not only to provide the means of promoting his own comfort, but to lay up an inheritance for his children, and this, he should consider, is as effectually done by enhancing the value of the acres, which are to constitute the patrimony, by good and permanent live fences, orchards of good fruit, and rural embellishments, as by bank bills or wild lands in the far west. Live fences not only serve to enclose lands, but afford a highly beneficial shelter to farm crops, and, if kept in order, add greatly to the beauty of the landscape.

In the few remarks we are about to offer on this subject, we shall direct the reader's attention,

1. To the material to be employed,
2. To the procuring the plants,
3. To the preparation of the ground and planting; and,
4. To the management of the hedge.

THE MATERIAL TO BE EMPLOYED.—The best material, we believe, is the thorn *(Cratægus)* most indigenous in the district where it is to be used—because such species must be *best* adapted to the climate and soil. The American thorn is generally of stouter growth than the European, which in the old continent is used for hedges, at least with us, and

is equally well armed with thorns. Of the native thorn, nine species are enumerated by botanists, viz:

1. *Cratægus coccinea*, berries large, red and pleasant tasted, and grows from Carolina to Canada. Two varieties.—*Eaton.*

2. *C pyrifolia*, (pear leaved,) grows from Pennsylvania to Carolina, west to Michigan.—*Beck*

3. *C. populifolia*, (poplar leaved,) grows in Pennsylvania, &c. berries small and red.—*Eaton.*

4. *C elliptica*—berries oval, 5 seeded, small, red—grows from Canada to Carolina.—*Beck.*

5. *C. Glandulosa*, (full of kernels,) fruit scarlet, middle sized, oval, 5 seeded. Canada and Allegany mountains—*Ib.*

6. *C. flaccia*, (yellow berried,) grows in Vermont.—*Eaton.*

7. *C. punctata*, two varieties, one having red and other yellow berries. Tree dwarfish—grows from Carolina to Georgia.—*Beck.*

8. *C crus-galli*, fruit small, red, mostly 1 seeded. Long spines—grows from Canada to Carolina—several varieties.—*Beck.* Var. *splendens*, *pyracanthifolia*, and *salisifolia.*—*Eaton.*

9 *C. parviflora*, (small-flowered,) fruit large, yellow, with 5 bony 1 seeded nuts—grows four feet high, from Canada to Carolina, in sandy woods.

The *C. oxyacantha*, or quickset thorn of Europe, has been introduced, and used to some extent among us; but we do not think it is so well adapted to our climate, particularly north of lat. 42°, as our native species. After a trial of seven years, we have been obliged to give it up, and have substituted native plants in its stead.

There are besides the foregoing, several other plants, which have been recommended, and partially employed in live fences. Among these we may name the following:

1. Red Cedar, recommended by the late John Taylor, of Virginia, and others. We have seen this plant in hedge in Maryland, but have never seen it make a good hedge.

2. The Wild Crab, though we have not seen it tried, seems well adapted for live fence—being hardy and well armed with spine.

3. The Honey or Three Thorned Locust, (*Gleditschia triacanthos,*) though belonging to the class of large trees, yet by close planting and judicious clipping, may be kept to a dwarf size. The male plant is armed with very long and strong spines, the female plant has fewer and smaller spines, and bears an abundance of seeds. The plant is said to be indigenous to the country south and west of New-Jersey, and is found to be hardy in lat. 42° N. We are experimenting with it as a material for hedges, and our confidence in it is becoming stronger as we progress. It is of rapid growth, and will require clipping probably twice in a season. It will ultimately make a very strong fence, if properly trained in time.

4. The Buck Thorn—*(Rhamnus catharticus.)* This may be termed a small tree, or large shrub, producing an abundance of black berries, often used medicinally as a cathartic—not armed with spines, but growing very close and compact. We long doubted whether this would make an efficient fence, till we were undeceived by a visit to J. H. Derby, Esq. of Salem, Mass. where we saw one of the most beautiful and efficient hedges that ever met our eye, formed of the Buck thorn. We purchased a thousand plants, and now have them in training as a hedge. We apprehend it will require a longer time to make of them a strong fence, than from the other plants we have enumerated.

5. Privet or Prim, *(Lagustrum vulgare.)* an exotic shrub, growing six to eight feet high, without spines, for the last ten years perfectly hardy in the neighborhood of Albany—branches very dense, and retaining their green foliage often to midwinter; makes a beautiful *ornamental* hedge about court yards and gardens, when symmetrically clipped, and a very *useful* one, in time, if we are to credit the reports of our grandfathers: for in olden time, prim hedges were extensively cultivated among us, particularly on Long Island, in Connecticut, &c. In two towns of Suffolk, according to Mr. L'Hommedieu, there were no less than four hundred miles of prim and black thorn hedges some sixty years ago. The cause of their sudden and general decay, at that time, has never been satisfactorily explained; yet we are certain of the fact, that for the last fifteen years the prim in this neighborhood has proved perfectly hardy, and has not been affected by any disease or insect enemy. It possesses one advantage over all the other plants we have named: it grows freely from cuttings, which may be readily transported hundreds of miles, in winter, with safety.

6. The common Beach is extensively employed in the Netherlands for hedges. They are beautiful and strong, the plants being trained alternately right and left, diagonally, resembling lattice work, though the labor in training is considerable. Beach mast may be had in any quantity in the north, and may be readily transported.

7. The Osage Orange, *(Maclura aurantiaca,)* is strongly recommended as a suitable plant for hedges in the southern and middle states. Although a native of the south-western states, we are disappointed in not finding it noticed by either Eaton or Beck. It forms a tree of the second class, is armed with strong spines, and has a tolerable thrifty growth; it will not bear our northern winters, but we think may be cultivated south of the Highlands, or lat. 40.

8. The Cherokee Rose, we are told, makes a beautiful hedge in the southern states, but we do not learn that it will succeed north of Maryland.

9. The last plant we shall name is the Japan Quince, *(Cydonia*—formerly *Pyrus Japonica.)* It is a shrub growing six to eight feet high, abundantly armed with spines, handsome foliage and splendid scarlet flowers—a native, as its name imports, of Japan. The wood is hard and the branches close, and after a few years a hedge of it would become impervious to cattle and hogs. It is cultivated in shrubberies as an ornamental plant, on account of its bright scarlet flowers. Another species has white flowers. This plant may be rapidly multiplied, by *cuttings* of the root.

We shall postpone our further remarks upon live fences till our November number, and in the mean time would respectfully invite gentlemen who have had experience, in this country, in cultivating hedges, to furnish us with any facts they may possess, and which may assist to enlighten the public mind in a matter which is daily becoming more important to the American husbandman.

BONE MANURE.

Agreeably to our promise, we now proceed to lay before the readers of the Cultivator the results of our reading, coupled with our experience, in regard to bone manure.

The bones of domestic animals are found to contain about equal portions of phosphate of lime and gelatine; those of young animals containing more of the latter, and the bones of old animals more of the former. The gelatine is highly nutritive to plants, and phosphate of lime enters largely into the structure of many species. To bring on a decomposition of bones, and render their fertilizing properties available to the wants of growing crops, it is necessary to crush or grind them—and their immediate benefit is in proportion to their fineness, and rapid decomposition in the soil—though ultimately they impart to the soil all their fertilizing properties, if they are broken to the size of one, two or three inches. In powder, or dust, their effect is at first more powerful, but less abiding. So, too, the like happens if the bones are brought into a state of partial fermentation, so as to give off a strong odour, by mixing them with lime, or ashes, or manure and moisture, before they are applied to the soil, and thereby hastening decomposition; and indeed this is the common practice, when it is desired to have them produce an immediate effect. To reduce bones to a proper size for agricultural purposes, bone mills have been erected, consisting of a series of cast iron rollers, formed with deeply indented rims, and teeth progressively more closely fixed. Many British farmers have erected small machines, with two cylinders of cast iron, with teeth, which lock into each other, by which they are broken into small pieces. We have had more than sixty horse cart-loads of bones, which cost us half a dollar a load, crushed in a plaster mill, though not made very fine, for which we paid 12½ cents per bushel as toll. The value of bone dust as a manure, in Great Britain, may be judged of from the following rates of prices, which we quote from one of the most recent agricultural publications: "The price commonly averages, for the dust, from 2s. 6d. to 3s. and in some late instances even 3s. 6d. have been paid—for pieces [of inch, three-quarter inch and half inch] from 2s. to 3s. 6d. according to size—and 1s. 10d. for rough bones, per imperial bushel."—*Br. Husb.* The reader will bear in mind, that the English shilling is a fraction over 22 cents. Prices have not yet attained this high pitch with us. The English dealers make no allowance on bones which have gone through the process of boiling, through this process evidently deprives them of a portion of their oil, and consequently diminishes, in a measure, their enriching properties.

From the experiments detailed in the British books, made with bone manure, we abstract the following, as affording evidence of its enriching qualities, and of the soil and crops which it most benefits.

On a poor soil in Yorkshire, which would no longer bear turnips, even with tolerable manuring, twelve to twenty bushels bone dust to the acre, put in the drills, the turnip crop was rendered excellent, and the following crops were much improved.

Six hundred bushels were spread upon twenty-four acres of dry, sandy, gravelly pasture, which had been laid down ten years. The condition of the cows kept upon it was so materially increased, that double the quantity of butter was made from them that was made from cows grazed upon land of similar quality, but not boned.

Twenty-five bushels applied to an acre of turnips, brought them above ground the third day, and into rough leaf the tenth. On an adjoining acre, dressed with twenty-five loads of barn-yard manure, the turnips did not appear till the fifth day, and were not fit to hoe before the 20th.

Mr. Graburn applied thirty bushels to the acre, and to an adjoining acre eight loads of dung, and the dung repeated upon the latter the third and fifth years, and the whole then sown with wheat. The turnips and wheat still showed the best crop on the boned part.

Capt. Ogilvie made a series of trials, applying fifteen to twenty bushels to the acre; and after five years he found all the successive crops of turnips, barley and grass seeds decidedly superior to those which had been produced by other manure.

The quantity applied to the acre varies materially, according to size. Of the dust, twenty bushels is deemed adequate for an acre; of the half inch thirty bushels, and of the inch thirty-five to forty bushels, are generally given. The dust is preferred for grass lands and turnips A greater quantity does not seem to increase, though it is believed to prolong, the good effect. Instances are quoted of lands showing the sensible benefits of bone manure for fifteen years after it had been applied.

The soils to which bone manures are best adapted, "are those of a light, warm nature; for on wet and cold grounds they have rarely been found to produce any sensible benefit." "On *heavy loams and clays*, the accounts of their operation have almost invariably been unfavorable; and it may be laid down as a necessary qualification in a soil fit for the application of bones, that it should be dry." "Upon *very thin sandy lands*," says the Doncaster Report, which is the best guide in this matter, "the value of bone manure is not be to estimated; it is not only found to benefit the particular crop to which it is applied, but extends through the whole course of crops; and even in the succeeding courses, its effects are visible in the improved quality of the land, and the efficiency of a smaller quantity than would at first have ensured a crop." On *dry limestones*, the same favorable results have been obtained; and no failures are noticed. Upon the *wolds*, a description of light thin lands, which were formerly in a manner unproductive, bone dust has brought thousands of acres into a most productive state, augmenting the crop always four and five, and often ten fold. On *light loams*, the Doncaster Committee give bones a preference to farm-yard dung. On *peat soils*, previously drained and laid dry, their advantages are reported to be so striking, that from fifteen to twenty bushels per acre, have been found to very far surpass the ordinary dressing of stable dung, and even of lime and pigeons' dung. On *gravels* their effect is more equivocal; on those that are wet, the application has been found decidedly unfavorable. Bones operate best on dry light soils which are deficient in carbonate of lime.

We have used crushed bones to some extent; and our experience goes to corroborate the preceding remarks, which are principally drawn from "*British Husbandry*." When used dry, and unfermented, their benefits have been more perceptible, with us, the second and third years, than in the first year; and when fermented, by adding ashes and water, and the process, we think, carried too far, the effect has been too stimulating, causing the corn and grain to lodge. Too large doses have probably been applied.

We are more familiar with another species of animal manure,—the refuse of comb-manufactories, which comprises the shavings and clippings of the horns and hoofs of cattle, than with bones. These contain more gelatine and less lime—more animal, and less earthy matter, than bones, and they readily decompose, if buried in the soil, without previous fermentation. They are applied in about the same proportion as bone dust, and are considered more fertilizing.

In the application of both bone dust and horn shavings, it is preferable to have these materials deposited near the surface than deep in the soil—to harrow, rather than to plough them in.

Both of these materials are advantageously used in composts, that is, mixed with earth, manure, lime, ashes, &c. Some mix fifty bushels of bone with five loads of burnt clay; others forty bushels with five loads of farm-yard manure, and a quantity of earth; others again recommend a mixture of eight bushels of coarse bone dust and eight bushels of coal ashes, as a sufficient dressing for an acre of land. The ashes should be kept dry, and when mixed with the bones, the mass ferments, and evolves a considerable degree of heat, when they are fit for use.

It has been stated, as the comparative result of some experiments, that bone dust acts in the cultivation of grain, as compared to the best stable manure, in the following proportions, namely:

In respect to the quality of the corn, as..... 7 to 5
In respect to the quantity, as ..... 5 to 4
In respect to the durability of its effects upon the soil, as ..... 3 to 2
—*Rep. of Inver.*

The Doncaster Agricultural Association are considered paramount authority in all matters relating to bone manure—having gone extensively into the use of it, and made it the subject of nice experiments and observation. The following is a summary of the rules which they have laid down for its application:

"That on dry sands, limestone, chalk, light loams, and peat, bones are a very highly valuable manure.

"That they may be applied to grass with great good effect.

"That on arable lands, they may be laid on fallow for turnips, or used for any of the subsequent crops.

"That the best method of using them, when broad cast, is previously to mix them up in a compost with earth, dung or other manures, and to let them begin to ferment.

"That if used alone, they may be either drilled with the seed, or sown broad cast.

"That bones which have undergone the process of fermentation are decidedly superior (in their immediate effects) to those which have not done so.

"That the quantity should be about twenty bushels of dust, or forty bushels of large, increasing the quantity if the land be impoverished: and also, according to our opinion, if the bones have been already manufactured.

"That upon clays and heavy loams, it does not yet appear that bones will answer."

OVERTRADING.

It was an excellent rule of an ancient philosopher, when an enemy accused him wrongfully, wholly to disregard the slander; but if justly, quietly to amend his fault. The charge of *overtrading*, applied to the people of the United States, collectively and individually, has certainly much truth to support it, and it will be wise in us to imitate the philosopher, not to murmur at the accusation, but diligently to endeavor to mend our ways. To *live within our income*, though a trite, is unquestionably a safe and prudent maxim. If a farmer sells one thousand dollars worth of produce in a year from his farm, and buys sixteen hundred dollars worth of goods and nick-nacks, he is certainly *going down hill*, and he may expect, in the words of the Prompter, that *every one will give him a kick*. But if he sells sixteen hundred dollars worth, and expends but one thousand dollars, in a year, he is in a *thriving condition*, and every one is disposed to lend him a *helping hand*—so true is it, that we are disposed to help others in proportion as they are inclined honestly to help themselves: for those only who can and do help themselves, are likely to requite the favors we render them.

If we apply these rules to the national family, we shall see that we are in a bad way; for, while we sold, or exported, during the last year, but one hundred millions from the national farm, we bought, or imported, one hundred and sixty millions of foreign goods or products—thus running in debt sixty millions in a single year. It requires no great foresight to see, that this sort of over-trading will ultimately prove as disastrous to the nation as it would to the individual. And common sense suggests the same remedy for the evil to the nation, that prudence would dictate to the individual, viz. *buy less, and raise and sell more.* The prudent farmer would forego foreign superfluities, live more upon the products of the farm, set his idle boys to work, and by prudent industry and good management, would not only soon be out of debt, but would be able to keep so—he would soon be independent, in the broad sense of the term. If individuals adopt this course, it will become the governing policy of the nation, for the national family is but an aggregation of these individuals.

If those, therefore, who lament the embarrassment of the times, would earnestly go to work to improve them, by imitating the example of the prudent farmer—in buying less, and earning more by their productive labor, the times would soon mend, and individual and national prosperity and independence would be established. Every man who buys, upon credit, what he really does not want, or what he has not a moral certainty of being able to pay for at the time stipulated, is chargeable with overtrading.

The fertilizing properties of wool have long been appreciated, though with us little regarded, from the circumstance that it is difficult to collect any considerable quantity. Yet woollen rags might be collected in almost as great quantities as those of linen and cotton, and are probably worth nearly as much to the farmer, as the latter are to the paper maker; and the sweepings of our woollen factories and tailor's shops, would add greatly to the amount. We have heretofore given a remarkable proof of the fertilizing effects of the sweepings of a woollen factory, in the case of Mr. Hubbard, of Middletown, Conn. who cut fifteen tons of hay, at a single clip, from three acres of land originally poor, but which had been made rich by the sweepings of his mill alone. We have also given evidence of their great usefulness in Watervliet. Chaptal enumerates several instances of uncommon fertility produced by like sweepings, and even by the water in which the wool of a manufactory was washed, and states, that the Genoese collect with care all they can find of shreds and rags of woollen fabrics, to place at the foot of their olive trees. In Great Britain they are used in hop grounds, and are also ploughed under for grain crops, and as top-dressings for clover. They possess a remarkable power of preventing the effects of drought. They sell in Europe from thirty-one to forty-four dollars per ton, and are applied at the rate of six to eight hundred pounds to the acre. In our cities large quantities might be collected by the indigent, and turned to good account; and it would be well for farmers adjacent to towns and factories to encourage this branch of economy. They are most serviceable upon light sands and gravels.

IMPORTS OF FOREIGN GRAIN.

The imports of foreign grain into the United States in 1835—1836, and three and a half months of the current year, were as follows:—

In 1835,..... 18,200 bushels.
1836,..... 193,700
To April 19, 1837,..... 854,000

Total in twenty-seven and a half months,..... 1,365,900
Of this quantity, there came from England,..... 532,000 bushels.
From the German states,..... 403,700
Holland, ... 159,000

Italy,	153,300
France,	12,500
Russia	39,600

And the residue came from Prussia, Sicily, Denmark, &c.

MIXED HUSBANDRY.

We say of lawyers, that any dunce may win a good cause; but that the meed of praise is due to him only who manages well and wins a bad one. We may say the same of a farmer: little credit is due to him, as a good manager, who upon the exhausting principle, obtains great crops from a good soil—his land continually deteriorating. But the farmer who, upon a bad soil gets good crops, and continues to improve his land, by draining, manuring and alternating his crops, is entitled to our highest commendation.

The great evil to be apprehended in our wheat districts is, that by neglecting the wholesome precautions of the prudent farmer, the lands will gradually, though perhaps imperceptibly, become, as they have in many of the old districts, *too poor to bear wheat*. We will suggest another precaution to those—and there are many of them—who place nearly their whole dependence upon wheat, to the neglect of other crops, and of cattle. The experience of the two last years admonishes us, that the wheat crop is liable to suffer serious diminution from the Hessian fly, from hard winters, from the grain worm, and from rust or blight; that this diminution often amounts to twenty, fifty and seventy-five per cent. Under this view of the subject, would it not be prudent—merely on a calculation of *immediate* profit—throwing out of view the *certain* advantage which would accrue to the land—would it not be prudent to introduce a more mixed husbandry, and to depend more upon farm stock? The rage for sheep and wheat husbandry, have so seriously diminished our stock of neat cattle, that meat and the products of the dairy have become scarce, and command, in market, nearly double their former prices. The same remark will in a measure apply to horses. Live stock is less hazardous than grain crops; it requires less outlay of capital and labor; and the former enrich, while the latter exhaust, the fertility of the soil. Roots, again, alternate remarkably well with grain and grass, afford the best and most abundant food for stock, and add greatly to the amount of manure.

The French farmers placed their great reliance upon wheat; the supply consequently became great, the market glutted, and prices nominal. This state of things gave an impetus to the culture of the sugar beet, as a substitute for the wheat crop, and the change has been found highly beneficial. It furnishes the nation annually with eighty to one hundred millions pounds of sugar, which they before had to buy of foreigners, enables them to increase and to fatten well larger stocks of cattle, and serves greatly to augment the fertility of their soil. In many districts of the German states, wheat no longer yields its accustomed product, and rye, spelts and roots have become profitable substitutes. In our own neighborhood, in the valleys of the Hudson and Mohawk, the grain worm has blighted the hopes of the farmer from the wheat crop, and cattle and sheep husbandry, and root culture, are annually increasing in extent, we have no doubt to the ultimate advantage of the farmer, and of the state at large. A change of this kind calls into action the latent talent, and the increased industry and good management, of many a man—and induces them to inquire, to think, and to improve—who would have gone on listlessly in the old way without ever dreaming, or believing, that there ever was or could be, any better mode of farming, than the exhausting, miserable system of their grand-fathers. And when improvement is once begun, and a man finds there is more which can be profitably learnt, it seldom retrogades.

These considerations induce us to put it seriously to such of our readers, as are confining themselves to a single branch of husdandry, be it cattle, or sheep, or wheat, whether they are not likely to improve their condition by adopting a mixed system, comprising cattle, grain, grass and roots—which to us, seem admirably adapted to benefit and greatly improve each other.

BLIGHT IN PEAR TREES.

Several competitors have already appeared for the five hundred dollars Philadelphia premium, for a preventive in the blight in the pear tree. Two of the communications have appeared in the Farmer's Cabinet; one from H. N. Watkins, of Prince Edward, Va. and the other from T. Emory, of Poplar Grove, Md.

Mr. Watkins, ascribes the blight to plethory, or too great a flow of sap, caused by pruning and ploughing; and the preventive he suggests, the utility of which he considers he has fully verified, is neither to prune, nor plough among the trees, after they have become well established in growth. He recommends that manure, if the land is poor, and the trees require it, be applied to the surface; and thinks ashes constitute a good dressing.

Mr. Emory is of opinion, "that the cause of *blight* and destruction in the pear and apple tree, is almost always what the French term *coup de soleil*, (stroke of the sun;") and to avoid the stroke of the sun, he recommends that the trees be planted in a moist, but not wet soil, so as to be sheltered on the southwest by "tall, dense forest trees, or a *house* or *hill*."

We notice these communications, not because we think that either assigns the true cause of the blight, or recommends an efficient remedy or preventive; but rather to point out their fallacy.

The blight is not confined to the apple and pear, but extends to many species of the natural order of Pomaceæ, as the quince, service, &c. and appears and disappears at intervals of some years; and hence we infer, that it is not caused by a stroke of the sun, nor an abundant flow of sap. These causes are continually operating, and if they produce blight in one season, they would produce it any season, and these trees would long since have been extinct among us. Both of these theories are contradicted by the well known laws of vegetable physiology. But we are not left to conjecture upon this subject. It has been satisfactorily shown, that the blight is owing to an insect, which is described and figured in the memoirs of the Massachusetts agricultural society. The first appearance of the blight, that we have noticed on record, was in 1780. We hear nothing further of it till about 1802, when we witnessed its effects during that and four or five subsequent years. It appeared in our grounds again in 1824 to 1828—since which it has scarcely been noticed, though it may have appeared in other sections of the country. During its last visitation, we lost, perhaps, a hundred pear trees, some apple trees, and most of our quince bushes. Of the pears, some grew in dry, and some in moist ground; some in ploughed, some in grass ground, and some in lanes where the ground was hard trod. The blight affected all alike. The only remedy that we thought beneficial, was promptly to cut off and burn all the diseased branches, taking care to cut below the discoloured bark and cambium.

IMPROVED METHOD OF MAKING CLOVER HAY.

We have in the Transactions of the Highland society two prize essays, for which the society awarded ten sovereigns (=$44.40) and a silver medal, for improved modes of making clover hay. The old method of making this hay in Scotland is liable to more objections there than with us, as the Scotch climate is far more humid, and less warm, than ours. These objections, to use the language of one of these essays, "are, first, that of allowing the grass to be 'too ripe,' as it is generally called, before it is cut. Second, allowing the grass to be on the ground till it be either rotted with bad weather, drenched with rain, or dried up by too long exposure to the sun." The principle of the improved mode consists in wilting, or partially drying the hay with great despatch, so as to get rid of the redundant sap, either by spreading or forming it, immediately after it is cut, into small conical handfulls around the foot, leaving the centre open, thereby exposing nearly all the surface of the grass to the air. When sufficiently wilted, so that the stalks have lost their succulency, the spread hay, or small handfuls, are put into cock, where the hay undergoes a partial fermentation, and the curing process is perfected. The fermentation is considered essential, either in cock or stack, *in order to convert the juices of the herbage into a saccharine state*, as in the process of malting, which is found to be both more palatable, and also more nutritious, for all animals fed upon it.

These principles of making hay are similar to those which we have frequently recommended to the consideration of the readers of the Cultivator; though the process of curing it is different, being unnecessarily tedious and expenive for our comparatively dry and warm climate. With us clover, cut in a succulent state, will wilt sufficiently in the swath, especially if once turned, to be fit to be put into cock in a few hours; and if the cocks are properly made, it will cure there, and be safe from the injurious effects of rain. The advantages of a partial fermentation in the cock, which transforms the juices into sugar, and thereby increases the nutritive properties of the hay, are new to us, though we confess they appear to be based upon philosophical principles. "I am of opinion," says Mr. Proudfoot, author of the first premium essay, "that the less turning clover hay gets, the better, as the oftener it is turned its value is deteriorated, more especially after getting rain." "The *end* sought in making hay," says the editor of the Farmers' Register, "is the same every where—and that is, to evaporate the mere water, and preserve the rich portion of the juices of the grass—and for these purposes it is desirable to have as much exposure of the curing grass to the air as possible, and as little exposure as possible to sun and wet."

EXPERIMENT IN FEEDING CATTLE.

The Edinburgh Quarterly Journal of Agriculture contains the details of an interesting experiment in feeding cattle, by Robert Stephenson. The experiment was undertaken with a view of ascertaining the relative profit of fattening cattle upon turnips alone, and of fattening them with turnips and other more expensive food, as grain and oil cake. For this purpose eighteen oxen were selected, over two years old; their live weights were ascertained at the beginning, during different periods, and at the end of the experiment, which continued 119 days. They were divided into three lots of six beasts each, and a correct account was kept of the weight of food consumed by each lot. Lot 1st were allowed linseed cake, bruised beans and bruised oats, in addition to turnips, and during the last

twenty-four days of the experiment twenty pounds of potatoes were given per day to each; lot 2d received the same allowance except the linseed cake, and half the potatoes; and the 3d lot were fed upon turnips alone. The cost of the keep of each animal, during the 119 days, was as follows:

Total cost of feeding one beast of lot 1,.....	£5	2	7
do do do of lot 2,.....	3	17	0
do do do of lot 3,.....	1	18	7½

The improvements in live weight were as follows:

First lot increased in weight,.....			108	stone.
Second	do	do	101	"
Third	do	do	49	"

Abstracting the cost of feeding from the value of the increased weight, the loss and profit would stand as below:

Loss on feeding lot 1st,.....	£3	15	8½
Profit on feeding lot 2d, ...	1	19	3½
Profit on feeding lot 3d, ...	2	11	1

"Thus, when turnips alone were used, a profit of twenty-two per cent was realized; when corn was used along with the turnips, the profit was diminished to eight and a half per cent; but when still more expensive food was used, that is, corn and linseed cake, along with turnips and potatoes, a loss was sustained of no less than 12 3-16 per cent."

Lot 1st were the largest oxen. They were fed each with one hundred and thirty-two pounds per day of Sw dish turnips; lot 2d were fed each with one hundred and twenty pounds of the same per day; and lot 3d, being the smallest, received but one hundred and fifteen pounds per day, and for twenty-four days but ninety-two pounds.

Lot 1st cost 4.884 pence for every pound of increased live weight.
Lot 2d cost 3.92 pence for every pound of increased live weight.
Lot 3d cost 3.39 pence for every pound of increased live weight.

The turnips were es imated at four pence per hundred weight; the potatoes one shilling and six pence per hundred weight; corn at three shillings and six pence per bushel, and linseed cake at three-fourths of a penny per pound.

"In conclusion," says Mr. Stevenson, "on this part of the subject we give it as our opinion, that whoever feeds cattle on *turnips alone*, will have no reason, on the score of profit, to regret their not having employed more expensive auxiliaries to hasten the fattening process."

ON THE BEST TIME FOR CUTTING HAY.

We have seen several well written articles on the subject of making hay, some advocating early, and others late mowing, but in general without any discrimation in regard to the grasses which constitute the meadow Now there is no sort of question that some grasses are most profitably made into hay when cut in blossom; and it is equally true that there are other kinds which cannot be cut in blossom without a loss in both weight and nutritive properties—so there is no rule that is applicable to all kinds. The loss, in the intrinsic value of the hay, in cutting at the wrong time, is often great, sometimes one-half.

The duke of Bedford went to great expense, in managing a course of experiments to ascertain the relative value of grasses, on different soils, and the best time of converting them into hay. These experiments were managed by Mr. Sinclair; and a table giving the summary results has been published in several agricultural works, and may be found, substantially, in the Cultivator, Vol. III. p 63. With a view of bringing the subject to the recollection of our readers, *so far as regards the best time of cutting the several grasses*, we subjoin an extract from Sinclair's table, exhibiting the proportionate value which each grass bears at the time of flowering to that which it bears at the time of seeding, barely remarking, that the exhausting effects of any crop upon the soil are greatest when it is maturing its seed. We confine the abstract to those grasses which most abound in our meadows.

Botanic and English names.	*Value. In flower.*	*In seed.*	*When best cut for hay.*
Trifolium pratense—red clover, .	"	"	In flower, July 18.
Phleum pratense—timothy, ...	10	23	seed, July 30.
Poa pratensis—smooth stalked meadow grass,.....	"	"	flower, July 14.
Anthoxanthum odoratum—sweet scented vernal grass,..	4	13	seed, June 21.
Poa trivialis—roughish meadow grass, ...	8	11	seed, July 10.
Agrostis vulgaris—fine bent grass —red top, ...	15	9	flower, Aug. 20.
Agrostis stricta—upright bent grass,	8	5	flower, July 28.
Dactylis glomerata—orchard grass, —rough cock's foot,.....	5	7	seed, July 14.
Avenia elatior—tall oat grass,....	"	"	seed, July 28.
Festuca rubra—purple fescue grass,	6	8	seed, July 19.
Holcus lanatus—meadow soft grass,	12	11	flower, July 14.
Festuca elatior—tall fescue grass,	20	12	flower, June 28.
Festuca duriuscula—hard fescue,	14	6	flower, July 1.
Alopecurus pratensis—meadow foxtail, ...	9	6	flower, May 30.

Note—The time indicated for cutting is adapted to the climate of England. The seeding and flowering will be earlier or later with us according to latitute.

Apply these facts to our practice. Our principal hay grasses are, clover, timothy, smoothstalked meadow grass, orchard and oat grass, and red top. Now it appears from Sinclair's experiments, that clover, smoothstalked meadow grass, roughish meadow grass, orchard grass, purple fescue, and meadow soft grass, are in the best condition for cutting about the same time, to wit, between the 10th and 18th July; that the timothy and tall meadow oat are best cut about the 28th and 30th July—and that the red top is in the best condition the 20th August. The latter generally grows in moist lands, and is the last hay grass that should be cut. The sweet scented vernal grass gives but a small burthen, and is generally sown for early pasture. The tall fescue is an excellent meadow grass, is fit to cut in June, gives a great burthen, but is scarce in our meadows. The most common mixture is clover and timothy, which are at maturity twelve days from each other. It is presumed the northern, or tall growing clover is here meant, as the small southern clover comes into flower early in July. In this case it becomes a matter of convenience with the farmer, or of calculation, at what time between the 18th and 28th July, he will cut this mixed crop of grass—if of calculation, he has to determine, according as one or the other preponderates, whether the clover will lose more by standing than the timothy will gain, and whether the latter math, from the early cutting, will compensate for lightness of the hay crop.

THE CROPS.

While we rejoice in the abundance of the summer crops generally, we are sorry to find, in the Genesee Farmer, a confirmation of our apprehensions in regard to the injury to the wheat crop in western New-York, occasioned by rust, &c., and that considerable damage was done to the summer crops in that section of the state, by the frost of the 5th August.

The Genesee Farmer of the 2d ult., says, "in places liable to early visits of frosts, as in the whole section south of the ridge dividing the waters of the lakes from those that flow southerly, and in many places to the north of this ridge, vegetation, it is ascertained, has suffered greatly. On the low lands, garden vines, buckwheat, and in many instances potatoes and corn, have perished—so far lessening the means of subsistence on which many have depended."

James Canning Fuller, who had made a tour in the west, from Skaneateles to Lockport, confirms, in a communication in that paper, the preceding statement. "The effects of the frost were not perceptible," says he, "until I got beyond the influence of the lake, which was about three miles distant." Corn, potatoes, "and especially buckwheat, in many places are much affected—the corn in some places nearly destroyed." And of the wheat he remarks: "From this village, (Skaneateles) to Lockport, it is my opinion the wheat crop does not exceed ten bushels the acre."

A letter from Otisco to the editor of the Genesee Farmer, says—"It it enough to sicken one to witness the change which a single week or fortnight caused in the wheat crop. Some pieces are destroyed totally, some injured slightly, and others not at all. Still the effect in lessening the sum total must be very great."

ON CUTTING CORN EARLY.

"The beautiful researches of M Biot afford interesting explanations of several agricultural practices hitherto not well understood, at least in a scientific point of view. For example, when the base of the stem begins to become yellow and dry, if the corn be then cut down, though the grain is not ripe, it will continue to be nourished at the expense of the green matter in the upper part of the stem, almost, if not quite as well, as if it had remained uncut, and will thus ripen well; while having been thus cut down early, much loss from shaking is prevented, besides the chance of loss by *lodging* from heavy rain and wind. M. Biot's experiments, from his well-known high character for rigid acuracy, are therefore well calculated to give farmers confidence in cutting down their corn, as soon as the lower leaves and the lower part of the stems are yellow and dry, though the upper parts may be green."

The term corn, in the above extract, applies to small grain; but how much stronger does the principle apply to Indian corn. If the almost dry straw of wheat imparts nourishment to the grain, after it is separated from the root, how much greater benefit must Indian corn receive from its succulent stock and leaves, abounding in elaborated food, after it has been severed from its roots.

OLDEN TIMES—1795.

We renew our notices of the first volume of agricultural memoirs, and begin with

OBSERVATIONS ON MANURES,

by E. L'Hommedieu, a gentleman of much practical knowledge in husbandry, and of a strong mind.

"In many parts of the country which have been long improved and exhausted," says Mr. L. "or made poor by cropping, there appears to be as great an emulation among farmers, in procuring manure, as we obse rve

among farmers in a new country in clearing their lands. He that pays the greatest attention to manure in the former case, as he that subdues or clears the most land in the latter, is called the best farmer: but the greatest difficulty is to procure a sufficient quantity of manure for the annual consumption necessary for the improvement of our old worn-out farms.—The manure made by the stock of cattle on such farms is very inadequate to their necessities; therefore it is of great importance that we resort to new resources for manuring our poor lands."

It should be borne in mind, that at the time Mr. L. wrote, alternating crops, root husbandry, and clover culture, which serve now as important means of preserving, and of augmenting fertility, were in a measure unknown in our practice. Mr. L. proceeds to notice various manures, viz:

Fish.—The quantity of menhaden, or mosbankers, taken upon the coast of Suffolk, and applied to the manuring of land, will astonish those who are not conversant with the facts. Immense seines are made use of—the fish are drawn to the shore, and carts are backed into the water and loaded with scoop nets. Mr. L'Hommedieu says—"This year I saw 250,000 taken at one draught, which must have been more than 100 tons; one seine near me caught more than one million last season, which season lasts about one month." The price is stated at $1.25 per thousand. The general practice was to cart them on to the field, spread them lightly, and plough them under. Their fertilizing properties were great; "between forty and fifty bushels of wheat an acre," says Mr. L. "was not an uncommon crop;" and he cites one case, where these fish were applied at the rate of 32,000 to an acre, and the ground sown with rye. *Fortunately* a neighbor's sheep broke into the enclosure, when the rye was nine inches high, and again when it had grown six inches anew, and ate the crop off, both times, to the ground; and yet the product was at the rate of 128 bushels the acre. If it had not been eaten off, it was believed the grain would have lodged early, and been lost Mr. L. estimates the net profit of such an acre of rye at $85.

Sink Manure —A practice is mentioned of digging a pit in the rear of kitchens, of 15 to 17 feet in diameter and 3 feet deep, filling it with turf or dirt from the street, and conducting into it, from the sink in the kitchen, all the dirty and dish-water, soap-suds, and adding thereto ashes, lime, chamber-lye, and other filth of the house. All this was taken out and carted to the field in autumn, and fresh dirt put in. In this way, "some farmers make twenty tons of manure in a year."

Nitrous earth.—The practice prevailed of collecting the earth under barns and stables, which is known to become strongly impregnated with salt-petre, and applying it advantageously to land. We once improved, in garden culture, the ground from which an old barn had just been removed. The onions, cabbages, &c. not only grew very large, but were earlier at maturity than we have ever at any other time had them.

Peat earth —The best mode of applying this, says Mr. L. is to draw it upon the upland, burn it, and spread the ashes. A better mode of using this earth is to make it into a compost with unfermented stable dung, in the proportion of one part of the latter to three of the former, in alternate layers—or with lime—or cart it to the cattle yard, and as soon as partial fermentation has begun, apply it to the land.

"Ground well tilled, will not take half the manure for a crop," Mr. L. justly observes, "as ground of the same quality prepared in the usual way;" and he might have added, is not half so liable to suffer by drought. And he adds, "the faster your harrow goes over the ground, the better; a quick stroke against the clogs breaks them much easier than a slow motion. Hence harrowing with horses is much better than harrowing with oxen, because they move quicker: with a light harrow, the horses may go on a trot, which will break the clods much finer than when they go on a walk." Much too depends upon the harrow; the angular harrow, made by Mr. Craig, *is* light; it pulverizes the soil thoroughly, and withal performs the work more expeditiously than the common kind.

Again, in regard to good tillage, Mr. L. remarks, "The finer the parts of the earth are made, the better; this we constantly experience in our gardens, and the same advantage would take place in our fields. The dews absorbed by the earth, when made fine or pulverized, and the nitre which adheres to it, add greatly to vegetation." "An experiment has been made to ascertain the difference between dew-water and rain-water; the result was, that the sediment or settlings of the dew-water, were more in quantity, blacker and richer, than that of rain-water."

Cow-penning.—Mr. L. suggests, that when this is resorted to, and it is a good practice to enrich land, the pens should be long and narrow, for the convenience of ploughing them before the cattle are put in, that the urine and dung may more readily enter the soil, and be preserved, and not be so much wasted or impaired by the sun and winds as they would be if the ground was not ploughed—the ploughing to be repeated in one or two weeks—"then cart away all the dirt as deep as it was ploughed, on your wheat field. By this means you get ten times more profit than you can make by yarding your cattle in the cow-yard, or on unploughed ground. This ploughed ground being made mellow, absorbs the stale and dung of the cattle; it receives and retains the dews and salts of the atmosphere, and becomes good manure."

ON THE FATTENING OF HOGS.

This is another communication from Mr. L'Hommedieu, the object of which is to recommend to farmers, to soak the corn destined for their hogs, until it has become soured, instead of feeding it to them dry—Much of hard corn, fed to fattening hogs, is not digested, and a considerable portion is discharged with the dung, which does them no good. Mr. L. estimates that one-tenth of the corn fed to hogs may be saved by soaking. Estimating the number of hogs annually fattened, to equal the population of the state, leaving out the cities, or 530,000, and that each hog consumed two bushels of corn, the saving by soaking the feed would *then* have been 50,000; *now*, upon the same calculation, it would amount to about $200,000. Mr L. thinks soaking as good as grinding, with the advantage of saving the toll, or one-tenth. If the corn is made to undergo fermentation before it is fed, the reasoning may be correct; but the modern belief is, that a saving of nearly fifty per cent is effected by *grinding* and *cooking* corn before it is fed, that the globules may be ruptured and the *dextrine*, or nutritive properties of the grain may be fully developed. Accurate experiments, made by the Rev. Mr. Colman, have shown that pigs fed with cooked Indian meal, gain twice as fast as when fed with dry corn; but on the supposition that twenty-five per cent would be saved, exclusive of the toll, the saving, upon the estimate of consumption laid down by Mr. L'Hommedieu, would amount to half a million of dollars annually, to the state of New-York, by grinding and cooking the corn feed for hogs.

Indolence the parent of vice.—It is a fact, which can not be controverted, that the want of mental and manual employment, often proves an incentive to vice, which infallibly will produce misery; and, so surely as the earth will bring forth noxious weeds, when left uncultivated, so surely will one vice beget another; which, if not eradicated, will multiply to an alarming extent, until its victims become a pest to civil society, and a disgrace to mankind.—*Bridgeman*.

A RIGHT—A REPUBLICAN SPIRIT.

"It is true that much remains to be done for the laboring class in the most favored regions; but the intelligence already spread through this class, is an earnest of a brighter day, of the most glorious revolution in history, of the elevation of the mass of men to the dignity of human beings.

"It is the great mission of this country, to forward this revolution, and never was a sublimer work committed to a nation. Our mission is to elevate society through all its conditions, to secure to every human being the means of progress, to substitute the government of equal laws for that of irresponsible individuals, to prove that, under popular institutions, the people may be carried forward, that the multitude who toil are capable of enjoying the noblest blessings of the social state. The prejudice, that labor is a degradation, one of the worst prejudices handed down from barbarous ages, is to receive here a practical refutation. The power of liberty to raise up the whole people, this is the great idea, on which our institutions rest, and which is to be wrought out in our history. Shall a nation having such a mission abjure it, and even fight against the progress which it is specially called to promote.—*Dr. Channing to Henry Clay.*

Pruning of the vine.—A correspondent in the Southern Agriculturist, has detailed in that journal, a successful mode which he has practised of training, or pruning the vine. It is to train up only the main stem, taking or pinching off all the lateral shoots, as fast as they appear, in summer, except those bearing fruit, and to pinch these off also above the fruit. In this way his vines bore early and abundantly—the fruit did not rot, but attained high maturity and delicious flavor.

Kyanizing wood for garden purposes —Mr. Loudon has noticed in his Gardeners' Magazine, a process discovered by Mr. Kyan, for preserving wood, and every kind of vegetable fibre, whether in the form of cloth or cordage. The process produces upon these materials the same effect that tanning does upon leather. The article to be thus *tanned*, whether wood, canvass, mats, lines, or other products of hemp or flax, are dipped into a liquid, prepared in a tank, and are thereby for a long time rendered indestructible by the weather.

MISCELLANEOUS NOTICES.

SUGAR BEET.

Robert Tripp, of Decatur, inquires of us,

1. *If the Sugar Beet is cultivated in the United States?*—It is, in various parts, particularly about Philadelphia and Northampton, Mass. The manufacture is expected to commence this fall.

2. *If it can be made profitable?*—Well managed, it certainly can; but experience can alone teach us good management, and of this, we have as yet but a small stock.

3. *Can it be conducted by individual enterprise, or does it require associate capital?*—The beet culture may be managed by individuals, and, with adequate capital and intelligence, so may the manufacture; but as the profit of the culture depends essentially upon a ready market for the roots, or the means of promptly manufacturing them into sugar, the culture and preparations for manufacture ought to be simultaneous.

4. *Can a knowledge of the manufacturing process be obtained with-*

out visiting a sugary personally?—A *sufficient* knowledge, we think, cannot; and indeed we should advise no one to embark largely in it, without the assistance of a manager who has a practical knowledge of the business.

5. *Is the soil of the western prairies adapted to the beet culture?*—If it will grow wheat and corn, it will grow the beet. The rich prairies are undoubtedly well adapted to the beet culture, and the country, being very remote from the sea-board, is well adapted to the profitable manufacture of sugar.

6. *Can seeds and machinery be obtained in this country?*—Seeds may be had in all our large towns, at the seed shops. We do not know that machinery for the manufacture of sugar is made in the country, but it probably will be in the course of the coming year. Inquire of the Philadelphia Sugar Beet Company.

Upon the subject of beet sugar, we have a communication from Solon Robinson, post-master at Lake Court-House, Ia. He invites the formation of a company, to carry on the beet and sugar business, on an arm of the Grand Prairie, known as Robinson's prairie, lying on the north-western section of Indiana, and near to the south end of Lake Michigan. It is described as a *dry* prairie, being thickly covered with fine grass, twelve inches high, and abounding in medicinal plants, as colombo, valerian, seneca snake root, gentian, ginsang, sarsaparilla, blood-root, &c. the soil a rich sandy loam, proved to be favorable to the beet. The proposition is to buy a large tract of land, at the government price of $1.25 the acre, and to establish the beet sugar business on a large scale.

Lincolnshire Sheep.—Jaqueline P. Taylor asks us a great many questions in relation to Lincolnshire sheep. We refer him to Mr. Cliff, of Carmel, Putnam county, N. Y. who is the only person that we know of, that can give the requisite information. We have sent the inquiries to him.

MIXED CROPS—RUTA BAGA.

Sidney Weller, of Brinckleyville, N. C. raises mixed crops of common *potatoes* and *pumpkins*, and gets good returns from both. He plants potatoes in hills, three feet apart, and puts the pumpkin seeds into every fourth hill. We have practised this mode of raising pumpkins, and think well of it. Mr. Weller states to us, that he mixes successfully, *rye* and *buckwheat*. He sows the seeds together about the last of July, cuts the buckwheat the last of October, pastures the rye in winter, and cuts a good crop the following summer. "To get a good crop of ruta baga, say 600 bushels, we must plant," says Mr. W. "by the middle of July, three feet apart, and thin the plants to one foot in the drills." We are agreeably disappointed to find that the ruta baga will give 600 bushels the acre in North Carolina.

Spelt Wheat.—Jacob A. Snyder, P. M. Rosendal, Ulster, wishes to know where he can obtain the seed of this grain, at what price, and at what time it should be sown? Will Mr. Speyerer, or some other Pennsylvania patron, answer these questions?

The Mulberry.—C. R. Hoovey, of Root, has addressed to us eighteen queries in relation to the culture of the mulberry. As it would be discourteous to our twenty thousand readers, to repeat in the Cultivator what we have not long ago published, we must refer Mr. Hoovey to numbers 1 and 2 of vol. iii. for answers to his queries.

THE GRAIN WORM AND HESSIAN FLY.

John Hacke, of Reading, Pa. writes us that he has an *infallible* mode of destroying the *Hessian fly;* and Solomon W. Jewett, of Weybridge, Vt. seems equally confident, that he has discovered an efficient mode of preserving our wheat crops from the *Grain Worm.* So far as we can judge, the gentlemen are both highly respectable and intelligent. Were we in the place of either, we should feel grateful to Providence, for the opportunity now afforded, of rendering an important benefit to society, and of becoming truly a public benefactor, by publishing the important secret to the world; and should either be induced to adopt our suggestion, we shall be proud to make the Cultivator the medium of their communication.

PLUMS.

The plums sent us by Mr. Tomlinson, of Schenectady, as the Orleans, are believed to be the *new* Orleans, and are known also under the synonymes of *early, new early, Grimwood's early, messieur hatlif*, &c. &c. They are rated as second both in quality and size, though they are beautiful fruit. The wood is liable to be somewhat injured by hard winters.

The plum sent to us from the garden of Mr. Lawrence, of Hudson, appears to be identical with a seedling we have in bearing, which originated with D. Benton, of Catskill, and which came to us under the name of the *yellow gage.* The fruit resembles in size and shape the green gage, and also in flavor, though the color is a faint yellow. This is a first rate plum, and the wood of those we have seem to possess the hardiness of the wild plum of the woods. We beg leave to distinguish it by the name of the *new* yellow gage.

The Franklin Farmer, is the title of an agricultural journal which has been just commenced at Frankfort, Ky. by F D. Pettit. It is a quarto publication of eight pages, and is published weekly at $2 per annum, payable in advance. We are sincerely gratified to see these useful periodicals multiplied among us. Their increase and liberal support is a good evidence of a growing good taste among the farming interest, and the best pledge of increasing and substantial improvement in our agricultural condition. We see by this publication, that Kentucky is likely to take the lead in raising blood horses, if not in raising fine neat cattle. The annnal exhibition of blooded stock took place at Lexington early in September. Many fine cattle were exhibited, and seventy premiums distributed. The Madison association stock fair was held about the same time, at which forty premiums were awarded. The stock was much eulogized. The Central association were to award fifty premiums, principally for stock; and notice is given of five other agricultural fairs, to be held in so many counties of that state, in September and October.

NEW CHEESE PRESS.

We have received, from Jonas Tower, of Madison, Ohio, a *Cast Iron Cheese Press*, occupying a space of about two feet square, and standing three feet high, which *appears* to us (for we have not the opportunity of *trying* it in the cheese business,) the most perfect cheese press we have ever seen. It is on the principle of continuous pressure, and the power may be increased or diminished at pleasure by a youth of twelve years old. Its advantages are,

1. It occupies but little space;
2. The pressure may be graduated at pleasure;
3. It can hardly get out of order, and will not require repairs.

As to price, we are not yet instructed.

Any neighboring cheese maker will be at liberty to use it during the remainder of the season, by calling on the conductor of the Cultivator.

THE HOVEN IN CATTLE.

G. W. Forman, of Fleming county, Ky. sends us the following directions for curing this dangerous ill:—"Give to the animal affected a few ears of old corn, or a lick of salt;—if so bad that it cannot eat the corn, or lick the salt, apply the salt to the nose, and they will then lick it. It will do no harm if it does no good. But an ounce of preventive is better than a pound of cure. *I never turn my cattle on a clover field with an empty stomach*, and when on I keep them on, salt them well, two or three times a week, and I have never lost one yet." The *preventive* is judicious. As to the efficacy of salt, we are inclined to give it credit: our cattle have daily access to salt, and since this has been the case, we have not had a hoven animal, though our clover is often luxuriant. Salt, given daily, is a preventive of many diseases.

For the cholic in horses, Mr. Forman gives half a pint of spirits of turpentine, mixed with a like quantity of melted lard or castor oil, in a drench; and if the case is very bad, the proportion of turpentine is increased. He has used it successfully in several cases. ☞ Mr. F.'s request in regard to steers shall be attended to.

The Berkshire Cattle Show will be held on the 4th and 5th of October, at Pittsfield; the Fair of the New-York Institute on the 16th, at Niblo's Garden, in Broadway. We would be happy to notice other like meetings were we enabled to do it correctly.

SMUT.

We have a thousand evidences on record, that if seed wheat is steeped twelve hours in a strong brine, and then mixed with fresh, caustic, powdered lime, before it is sown—*the crop will not be smutty.*

LIME-STONE AS A MANURE.

H. Nazro, of Troy, asks us what are the effects upon the soil of crushed or ground unburnt limestone, and whether it is difficult to reduce it to powder? We answer, that it *is* beneficial upon soils deficient in carbonate of lime—that it opens clays and renders sands more compact, and is highly beneficial in increasing the good effects of manures which are applied to the soil. It effects a mechanical improvement upon all these soils. The great difficulty consists in pulverizing it, as none but the softer qualities can be well reduced to powder.

CORRESPONDENCE.

Lake C H Ia August 29, 1837.

J. Buel, Esq.—Dear Sir—I conceive it to be a duty that each patron of the Cultivator owes, as much as payment for the amount of his subscription, to communicate to you all such facts as he may deem important or beneficial to his agricultural brethren, that therefrom you may *select* such items as have not been, or that you may deem useful to publish. With this view I send you the following scraps:

DISEASES OF HORSES.

Thistelow and Poll Evil, both of which I have known effectually cured, after breaking, by crowding a lump of pearlash or salæratus into the sore. If the first application is not effectual, repeat it. The patient should be thoroughly physicked at the same time.

DYSENTERY, BLOODY FLUX, CHOLERA MORBUS, ETC.

If there is an "infallible remedy" in the world for any complaint the human system is subject to, there is one for these complaints in a very

strong tea made of the bark of the Sweet Gum, the scientific name of which is "Liquid Amber." It grows a large tree, is a native of southern latitudes, grows very abundantly on the high table lands of Ohio and Indiana, has a leaf like maple, and a ball somewhat like "Button Ball," or Sycamore, exuding a very aromatic white gum. I *know* the medicine to be almost invaluable.

BOILING RICE.

I venture to say not one in ten of the readers of the Cultivator, has ever heard of a receipt for so simple a piece of cookery. There is none more important. Try it. If it is an improvement, recommend it. Put three cups of rice into two cups of cold water, set it over a brisk fire, and after it commences boiling, let it stand *eight minutes only*—'tis then ready for the table. Instead of being a mass of unwholesome salve, it will have completely absorbed the water, leaving the grains separate, soft and excellent.

LONG MANURE.

I have tried the experiment this season on my garden, with most convincing success. Having a very retentive subsoil, I tried the plan of burying coarse dry straw under my beds of beets, carrots, parsnips, peas, beans, vines, and almost every kind of vegetable that I planted, to serve as an underdrain as well as manure. The effect has fully convinced one sceptic. I hope others will try it. This is the first time I ever saw straw used for manuring any crop, except potatoes. I have toiled many a day to rot it, so as to make it "fit to use for the next crop." How much knowledge to be gained for 50 cents a year! As a means of extending such valuable knowledge, I ask a consideration of

A NEW PROPOSITION,

to extend the circulation of the Cultivator, or some other agricultural paper. It is this:—

Make it an invariable rule, that every agricultural premium, should include a copy of such paper, which should be given by the person receiving the premium to some one who had never taken it—always taking it for granted that no one would ever get a premium unless he was a patron of some such paper And further, let those who are able and willing, raise a fund, say $500, for gratuitous distribution of the Cultivator, among those who are either unable or unwilling to pay, but who would be willing to read. Let every friend to the proposition subscribe such amount as he will give, as soon as it is ascertained that $500 can be raised. To begin, although I am poorly able to do it, I will subscribe $5. I hope it will not stand long alone. I am respectfully yours, &c.

SOLON ROBINSON.

[*Note*.—Mr. Robinson's subscription is registered, and we shall be glad to see his proposition sustained. Should it be so, the names of the contributors to the $500 fund will be published in the Cultivator.—*Cond.*]

CHESS OR CHEAT.

In giving the following communication, we are not desirous of renewing a vexatious and unprofitable controversy, nor do we intend to become a party in the dispute—but we give it out of complaisance to a highly respectable correspondent. We are free to express our doubts, however, whether the chess discovered in the wheat ears was anything else than shrivelled or blasted kernels of wheat, caused by rust, or other disease.

Caroline, N. Y. August 30, 1837.

DEAR SIR—Whether wheat ever turns to chess or cheat, has been, for a long time, a subject of controversy. Will the certificates I enclose you from Mr. Rounseville, and from Mr. Randall and sons, settle this long contested point? Will it be said that the two seeds being sowed together has caused this mixture of seed in the same head? If so, why do we not find a like mixture of wheat and rye in the same head, when both seeds have been sowed together on the same ground? or spring wheat and oats? If a mixture is supposable, from seeds being sown together, ought we not rather to have expected to find a grain between wheat and chess, and partaking of the nature of both? I leave you and your readers to determine this point, and conclude by assuring you that those gentlemen are intelligent men, and as much to be relied on as any in our county. Mr. Randall's sons are probably from 18 to 28 years of age.

With great respect, sir, your ob't servant,

JOSEPH SPEED.

Richford, N. Y. August 16, 1837.

I hereby certify, that I saw, some years since, in this neighborhood, a head of wheat and chess or cheat, growing together on a wheat stalk, not a chess stalk. For about an inch on the lower part of the head, was fair wheat all round the head. For about two inches above this, on the remainder of the head, on one side, grew distinct grains of chess, and on the other side, fair and distinct grains of wheat—as distinct and evident as are grains of wheat and chess growing on different stalks.

JOHN ROUNSEVILLE.

Caroline, N. Y. August 16, 1837.

We hereby certify, that we saw, at this place, last harvest, we believe as many as twenty heads of wheat, about one-third of the lower part of each head was round, containing wheat, and the remaining upper parts of the heads were flat, containing chess or cheat. Respecting this, there can be no mistake, as we examined the heads carefully, and the difference between the grains of wheat and chess was plain and evident to all of us. The *straw* was wheat straw, and not at all resembling chess straw.

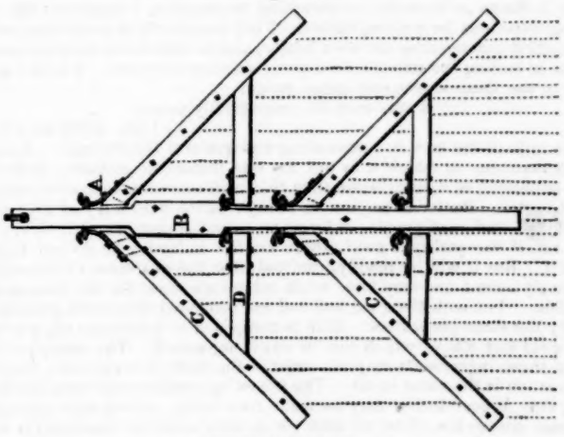
VALENTINE RANDALL,
MERRILL H. RANDALL,
JOB S. RANDALL,
CHAUNCEY RANDALL,
LEROY D. RANDALL.

IMPROVED HARROWS.

Pittsford, Monre co. Aug. 10th, 1837.

Mr. BUEL—DEAR SIR—I herewith send you the drawing of a harrow which I have lately completed, and for which I am procuring a patent.—If you shall consider the principle upon which it is constructed practicable, and an improvement that will result favorably to the agricultural interest, I shall be pleased if you will present a notice accompanied with an engraving and explanation, to the readers of your valuable paper.

Fig. 40.



EXPLANATION.

A. Hooks and eyes on each arm and brace, to permit the arms to play according to the surface of the ground. The hooks fastened to the arms and braces by screw-bolts and nuts; the eyes on the ends of iron bars running through the centre beam.

B. Centre beam, with a swell eight inches wide to receive two teeth, which are four inches apart in line, and set standing so that the points may be six inches apart; they are set catering from each other, to prevent clogging; another tooth farther down works in the centre of the two first.

CC. Arms, each having six teeth; teeth nine inches apart on beams, but working six inches apart in line, and so arranged that the teeth on the lower arms work in line in the middle of the track between the teeth on the fore arms.

D. Braces to the arms, into which they are fastened by tenons, and pinned.

The arms may be taken off from the centre beam, by taking out the bolts from the braces and swinging them forward.

The great advantage which I conceive my harrow possesses over others, even of the jointed kinds, consists in its working more perfectly the *whole* surface of the ground over which it passes. The arms swinging independent of each other, enables one to descend into a hollow, while the other on the same side of the centre beam, is elevated by a stone, a sod, or any other little eminence;—whereas, in other jointed harrows, both arms would be elevated to the height of the highest, and consequently leave some ground undisturbed, or at least, but partially harrowed. Another advantage is, that the ground is harrowed alike in the middle and on the sides of the track, which does away the necessity of lapping the harrow on the ground already harrowed. The working of the teeth of the fore and back arms leave their track three inches apart from centres, and being one inch square, and working diagonally, each tooth disturbs the ground nearly one inch and a half; leaving the tracks but one and a half inches apart. Respectfully yours,

EDMUND WILBUR.

WIRE—CUT AND GRAIN WORM.

DEAR SIR,—I have practised fall ploughing just before winter set in, and twice have turned over swarded land in a January thaw, which I wished to redeem from worms; and, in general, had my expectations realized.

The reasons which I would assign are these: worms, in most cases, like other insects and animals, prepare in order for winter; and when removed from their torpid winter bed, to be more exposed to frost, not sufficient time allowed them to repair before the soil is congealed by freezing, they eventually perish.

In observing the progress of the grain worm for several years, we have had, in this section, two seasons in which the worms have almost in toto been destroyed by extreme dry and warm weather, at the time directly following the depositing of the nit or worm in the glume.

Respecting the security of the wheat crop from the fly and grain worm, I am flattered by the experience of the past season, that I have obtained a remedy. On different parts of a field of wheat I made an experiment, the result was no grain worms were found; at the same time in other portions of the field, where no remedy was applied, very sensible damage was noticed.

The remedy is simply grounded on principle, the expense was but a trifle. Respectfully yours,

To J. BUEL, Esq. SOLOMON W. JEWETT.

Weybridge, Vt August 21, 1837.

DIRECTIONS FOR MAKING BUTTER

Mr. J. BUEL.—Dear Sir,—According to promise, I send you the following directions for making butter. They are strictly in accordance with the method practised by my own family, and in which we have been successful in suiting the market for a great number of years. You are at liberty to use them as you may judge proper.

I am, dear sir, respectfully yours,

JAS. SMEALLE.

The milk of the cow is a nourishing and grateful *food* to man. Among the various uses to which it is put for this important purpose, none are more deserving of consideration than that well-known delicious substance called butter. Butter is an almost indispensable necessary of life; it is used by all classes of people; it forms an essential part of nearly every repast, and if the quality is good, there are few indeed who do not highly relish it. But it will be readily admitted, that the qualities of butter differ extremely; some are very fine, while others are unfit for the purposes of the table. Yet both the good and bad are produced from milk possessing exactly the same properties. Milk is composed of a peculiar oil, (or butter,) curd and whey, which can be easily separated. The same proportion of these ingredients may not exist in the milk of every cow, but the combination is the same in all. The following position will therefore hold good, viz: If good butter may be made from milk, and all milk possesses the same properties, then all milk (of healthy cows is intended) is susceptible of producing good butter. It is admitted that the food of which the cows partake, for the time being, will more or less affect the quality of the butter. Winter and summer make, for example, are very different, but both may be good of their kind,—difference in quality arising from this cause, therefore, will not affect the principle above laid down. It is evident that it is not to the milk, but to the management of it, that we must look for the cause of that diversity of quality existing in butter.

When milk stands at rest for some time, cream collects upon its surface, which it will continue to do if *kept in a proper state*, until very little is left in the milk; but under certain circumstances it becomes sour and coagulated, after which the cream ceases to gather. It is generally admitted that the greatest quantity of butter is obtained by churning the whole of the milk. If this course is to be pursued, churning ought to be done as soon as possible after the milk has thickened. But the general practice is to churn the cream only, in which case, means must be used to keep the milk sweet, in order that the greatest quantity possible of cream may be obtained. The milking pails, milk pans, &c. must be regularly cleansed and scalded before being used. Let this extend to the whole apparatus of the dairy.

Zink or tin milk pans should be used, they being most cooling and easily kept sweet. The milk room must be well ventilated, and as cool as possible. In very warm weather it will be of advantage to place the milk pans on the floor.

Cream is composed of the same ingredients with milk, but in different proportions. It must be skinned off as soon as it has ceased collecting, and churned as soon as possible after it has thickened. If it is permitted to stand for a length of time before churning, the component parts will separate spontaneously, and in churning numerous particles of the curd will become blended with the butter, and can never afterwards be separated. The butter will appear spotted, it will have a sour trste, and will very soon become rancid. Cream is extremely liable to become tainted by any offensive smell with which it may come in contact. Butter will frequently have a flavor of cheese, onions, &c. merely from such articles having been placed near the milk during the time of creaming, hence the necessity of keeping the milk room sweet and clean. Care must be taken not to make the churning too warm; every one conversant with the business, knows the inferiority of what is termed scalded butter; it is much more safe to churn too cold than too hot. Hot water should never be used for the purpose of warming the churning. Its coming suddenly in contact with portions of the cream causes it to curdle and produce those evils already mentioned, when separation of the parts take place. When the churning requires warming, the better way is to fill a tin pail or milk pan with the milk or cream, set it in hot water, stirring it while warming; this can be repeated until the whole is brought to the proper temperature.

We have said that the several ingredients of which milk is composed can be easily separated. Although this be the case, it requires time and labor to obtain either in a perfectly pure state. Butter, as taken from the churn, will contain a considerable portion of the other matters, and on the proper separation of these, the quality of the butter in a great measure depends. If the business has been rightly conducted, they will be in a liquid state, viz. of sour milk, and may be almost entirely removed. Many commence the operation of working the butter by washing it in cold water; the practice, although much followed, is not a good one; it injures the color, and detracts, in a considerable degree, from that delicious nutty sweetness, which fine butter possesses. This may appear novel to some, but it is not new to many of our best butter makers. Let any one try the experiment, by treating parts of the same churning, the one by washing, and the other according to the directions here given; it is easily done, and will remove every doubt.

Raise the vessel containing the new made butter a little on one side, to allow the milk to run off; commence working it with the ladle by bruising it down, turning it over, &c. pouring off the milk from time to time as it collects. Continue until the milk ceases coming off; add the proper quantity of fine salt, mixing it well with the butter, and set it in a cool place until the following day, when it must be again thoroughly worked. The salt will have dissolved in the butter, and part of the pickle will work out, taking with it nearly all that remains of the foreign matters. Continue working until the pickle comes off clear, and the butter a tough, solid mass. The excellent preservation of the butter depends much on this part of the business being properly performed. and to its mismanagement may justly be attributed a large proportion of that of inferior quality. As part of the salt will have been lost by working, the proper quantity must now be added, with about half a tea spoonful of salt petre, well pulverized, to ten pounds of butter, mixing the whole properly. Here a caution may be proper, viz. having obtained good butter, don't spoil it with salt, as is too often done. A medium is best, not so little as to make it insipid, nor so much as to destroy the flavor, and make the taste disagreeable.

In packing butter, the vessel to receive it, if made of wood, should be seasoned for at least a week previous to using it, by filling it frequently with buttermilk; it must likewise be properly cleansed and scalded. The butter should be put down as soon as the working is finished, while it is yet soft and pliable, pressing it together in such a manner as to leave no vacancies between the different churnings. If the butter is intended to be kept for a length of time, the following treatment will answer the double purpose of excluding the air, and supplying a proper pickle, which are both necessary. Cover the butter neatly with a linen or cotten cloth, over which lay a quantity of fine salt, add from half a pint to a pint of pure water, repeat either or both when necessary. Set it in a cool dry cellar. Follow the above directions and the butter will keep well, and be of excellent quality.

[NOTE.—We have seen and tasted both the cheese and butter of Mr. SMEALLE, made according to the directions, we understand, given above and in a former number of the Cultivator, and we do not hesitate to pronounce both of the first quality.—*Cond. Cult.*]

FARMING IN THE VALLEY OF THE WABASH.

La Fayette, Indiana, August 19, 1837.

JUDGE BUEL,—Dear Sir,—I have been making a few experiments in agriculture. I bought ten bushels of Black sea spring wheat, the second crop from the importation, and raised on Mr. Hand's farm, in Madison county. The seed had considerable *smut* in it, and following the directions in the Cultivator, I soaked the seed wheat in lime water,* but I find the crop to be very smutty.

The seed was sowed late on "sod ground;" by this, I mean the wild prairie in its natural state, simply turned over. The sod is then very tough, and requires a year to rot before it can be ploughed. I sowed late and in sod ground, which had not rotted, and all predicted a total failure and waste of seeds, but on the contrary, I raised *one-third more*, or about thirty-three bushels per acre, which is ten bushels per acre more than any I knew of around. Their crops were winter killed generally. Our crop was ripe before others, though planted late in spring.

The Baden corn which I see you notice in a former number, was received *very* late, and I fear will not fully ripen; but it is a wonder to all who behold it. The stalks are magnificent, large, very stout, and exceedingly tall, beyond any thing ever seen, even in this western Eden. We have fifty acres in this corn, doing well, and from five to ten ears on a stalk. If the fall is late we shall have a great crop. We followed Mr. Baden's directions, planting five feet apart; but certainly three feet apart, and three stalks in a hill, in this rich and black earth, is better than two in a hill and five feet apart in the soil of Maryland, and old states.

* The Cultivator directs, steep in *salt and water*, and then apply LIME.

If the smut can be kept out, spring wheat will be the only wheat raised in this county. We have about 200 bushels raised from six acres, and could sell at $5 per bushel.

Soil in this county is exceedingly fertile. I know of farms planted for nine and ten years, every year in corn, and equally as good now as ever, and manure is of no account here. In this town we pay 75 cents a load to have it hauled away!!!

Succession of crops is not thought of here, and in our immense corn fields, a hoe is never used. I do not believe 100 hoes are sold yearly in the county, and only for gardens. The ground is furrowed or listed, three feet to four feet apart, then cross furrowed, and into each corner three or four seeds dropped, and returning with the plough is covered up by the ridge. The planting is done. Twice after that at different times the plough is run through *one* way, to throw the dirt up against the stalk, and clean the weeds, and the crop is "laid by," and at harvest 45, 50, and 60 bushels of corn is confidently expected.

I earnestly hope and repeat the wish, that we may be favored with a visit from you; I am well acquainted with Indiana and Illinois, and will show you any part.

I am, sir, yours respectfully, E. A. ELLSWORTH.

PIGS *WILL* FATTEN ON APPLES.

Plymouth, Conn. September 12th, 1837.

J. Buel, Esq.—Dear Sir,—Although it is pretty well established and believed by farmers and others, that hogs can be fattened on apples, pumpkins, &c. yet many people cannot be persuaded that good, solid pork can be made without the aid of corn. For the purpose of removing, as much as possible, objections on that account, I send you, for insertion in the Cultivator, if you think proper, an extract from a letter to me, from F. J. Finn, Esq. of this county, written in answer to an inquiry I had made of him, and may be relied on. His letter to me is dated July 12th, 1837.

"As to the apple pork I say, that I shut up my pig the forepart of September. He then weighed fifty-five pounds. The precise day I shut him up I do not recollect. I kept him on apples, raw, promiscuously gathered, both sweet and sour, but mostly sour, say four weeks, till I had potatoes and pumpkins from the field, ripe, and large enough to boil. I then boiled equal quantities of apples, potatoes and pumpkins in a potash kettle, to a complete pudding, by mashing them, while boiling, with a hoe, and of this consistence I fed him twice a day, as much as he would eat. About a fortnight of the last of his feeding, I gave him, in one barrel of the above mixture, four quarts of buckwheat ground. This was his only food. On the 21st December I killed him, and sold him for $50, weighing nearly 300 pounds. I then pursued the same course with another, which I am now eating. Better pork I never had, and finer ham was never tasted."

Yours, C. BUTLER.

YANKEE HOMMINY.

As to the word "*Homminy*" and the "article" being "western," I can inform your friend, that I think he is mistaken. I was born, bred, and still reside in Yankee land, and have been well acquainted with both the name and the thing, more than sixty years, during which time no year has, and I could have wished that no week might have, passed, without my feasting on it. I am now waiting impatiently for the corn to ripen, so that I can feast on it again. I have, however, a much less "tedious" process of preparing it than that described by your friend. I send the corn to mill, and have it cracked, or rather ground as coarse as possible in the mill. This disengages the hulls, so that the cook can wash them off, and the meal by grinding, is also worked out, and used for culinary purposes. When I was a boy, and no mill was near where we resided, we used to prepare homminy in a mortar, as stated by your friend; and the old homminy mortar has descended, and still belongs to me. But prefering the less tedious process, we have little use for the mortar. As to homminy being a good substitute for rice, I should reverse that, and call rice a pretty good substitute for homminy. C. B.

CROPS IN SUFFOLK, &c.

Upper Aquebogue, N. Y. September 18th, 1837.

Mr. J. Buel,—Sir,—The opinion is gaining ground with farmers in this neighborhood, that bitter weed, of which our lands are full, has a very destructive influence on wheat when ripening. We think that a wheat field, containing a large portion of the bitter weed, has a greater tendency to blast and mildew than one where there is none. We hope that observations on the subject have been made elsewhere; if so, will you be pleased to state them, and the causes, &c.

We noticed in the September number of the Cultivator, observations on the wheat crop in various parts of the country, which on the whole are rather gloomy. May we also be permitted to give a view of the prospects of the farmers in Suffolk county, and Long-Island generally? Wheat crops average full half, with an excellent kernel; rye is good, with a full crop; oats never better, weigh thirty-five and forty pounds to the busnel; corn certainly never looked more promising, and bids fair for an abundant crop; potatoes fine and large, with great yield; and turnips, old Suffolk will be, as she always has been, foremost in producing famous crops of that most valuable vegetable.

Thus it will be seen that the cultivators of the soil can have no excuse for crying hard times, distress, &c. Yours, &c.

B. F. WELLS.

EXTRACTS.

[*From the Records of the United Agricultural Societies of Virginia.*]

GOOD FARMING IN VIRGINIA.

[The following letter was written at a time when the clover husbandry was considered altogether impracticable for the poor lands of Virginia.—*Now*, when it has been established that calcareous manures will remove that natural defect of those soils, this letter may be far more serviceable for that region than when it was written, or than its writer could then have anticipated. Ed. Far. Reg.]

Bremo, Fluvanna, 21st December, 1830.

Dear Sir—Yours of the 2d December, did not reach me until within a few days, from the circumstance of its not being sent to my usual post-office. This will excuse me for not being more prompt in my answer to you. The consciousness that you have counted too largely upon the information I am able to impart, on the various agricultural subjects referred to in your letter, and the anxious desire I feel to encourage the spirit of inquiry, which seems to be spreading itself amongst the cultivators of every section of the state, induce me, the more readily, to comply with your wishes, as well to evince my perfect willingness to contribute what I can in so good a cause, as to apprise you promptly of the necessity of your applying to other and better sources, for the desired information.

Your queries shall be taken in the order in which they are made, and without confining myself to the direct answers, shall add such general remarks as appear to me any way connected with rural economy;

1. "The process of fallowing as practised by myself." This is to plough in a crop of clover, as nearly as possible at the stage of its growth, when it is in the best state for cutting to make hay. Of course, where there is a full portion of your rotation in clover, there can be but a part of your fallows ploughed exactly in the proper time without extra teams, and unusual seasons. Hence, the necessity of beginning a little before the clover has attained the precise point, to yield the greatest advantage from being turned into the earth—and hence too, the necessity of a second ploughing, where your first was early, and the season favorable to vegetation after the process. But I deem it less important to be minute upon this head, as for reasons hereafter to be assigned, I do not think summer fallows and the clover husbandry (which I consider as inseparable,) suited to the sandy soils of the lower part of this state.

2. "The advantages as to product of a clover fallow over wheat after corn?" This may be stated to vary from nothing to a double crop, depending upon the opportuneness and perfection of the process, and the adaptation of the land to the use of plaster of paris. Soils suited to plaster, with a heavy crop of clover ploughed in, at the proper time, previously dressed with three or four pecks of gypsum to the acre, followed by favorable seasons for rotting the buried clover, and seeded in the month of October, will rarely fail to give two bushels, for one from the same land after Indian corn. On the other hand, a crop of clover (and the heavier the worse for it,) dried by our powerful sun, and consequently imperfectly buried, from the hard and unmanageable state into which the earth is brought frequently by the summer droughts, will often not yield a better crop than the same land would produce after corn.

3. "The difference in the quantum of labor in fallowing for wheat, and wheat after corn." This can only be decided by referring to the number and kind of operations which are performed in each process, and as these ought to depend, in number and kind, upon a variety of circumstances, the relative expense of the two modes of husbandry must necessarily vary in like manner. Under a fortunate concurrence of circumstances, fallows may be seeded upon the first ploughing, and completed with a single harrowing; but it often happens, that a second ploughing, and under particular circumstances a third, and two harrowings, may be necessary to do justice to the crop. In like manner, a single operation, with a single horse plough, and a slight chopping the step, frequently do more ample justice to the wheat crop after corn, than, under other circumstances, will result from cutting up your corn, breaking up with the double plough, harrowing to receive the seed, and sometimes ploughing with single ploughs before the second and last harrowing.

4. "The effects as to improvement and exhaustion." These are also much influenced by the circumstances already adverted to as affecting the production, but it may be assumed, that the land is left in much better heart after a fallow crop, than after wheat succeeding corn; when the last, however, has credit by the greater quantity of grain yielded by the two crops over the one, it exhibits too imposing a claim, upon the score of profit, to be given up, even on our clay lands. On the light sandy lands of the lower country, so much better suited to Indian corn, and less adapted to fallows, I am of the opinion, that wheat after corn, is the most profitable and judicious course of husbandry.

5. "On what soils is the practice of fallows most beneficial?" Wheat soils, or those having a considerable proportion of clay in them. This being the soil, only upon which clover can be profitably and extensively cultivated, I would recommend summer fallows only, where this description of soil was found, and the clover husbandry practised. Upon this kind of land, without clover, I should not hesitate to adopt winter fallows; in other words, the English naked fallows, stirring them with single ploughs through the summer, in preference to depending on a late summer fallow. The influence of the sun on this description of soil, recently exposed, is not as injurious as on sandy soils, and by no means equal to the evils arising from the hard and untillable state into which our summer sun bakes it.

The remarks on this head sufficiently express my opinion, as to "the profitable introduction of fallows where a reduced sandy soil and hot sun preclude clover."

6. "What is the difference of product between wheat after one ploughing on grazed land and that not grazed, or is either practised?" Both are practised, and when the vegetable matter is turned into the earth, in a favorable state for rotting, that is, with some remaining succulence, and succeeded by a suitable season to promote putrefaction, the great agents of which are moisture and heat, the more that has been turned in, the better the succeeding crop, and the less the injury sustained from its maturation. But in the two last dry summers, I have known some fields of fallowed wheat almost destroyed by the dry vegetable matter remaining undecomposed in the soil. It seems therefore, to follow, that the less vegetable matter turned into the soil, the better for the immediate crop, unless it is prepared by decomposition into the food of vegetable life.

7. As to "the period that land may remain under grass, for improvement, fallowing without causing the crop to be foul"—there is a difference of opinion among the farmers of this quarter, but I think there is a preponderence in favor of the opinion, that clover, (we cultivate no other grass,) ought to be ploughed the summer twelve months after sowing it, and of course where it is cut at all, the same year of taking off the crop.

My own practice has been to plough in clover the summer two years after sowing it, thinking it reasonable that the land would be more improved by its longer rest, and giving the whole growth of the year it is ploughed to the soil; but the result, especially for the two last years, has disappointed me. It may be objected to my practice generally, too, that the earth becomes much more firmly settled, and is brought into tilth with greater difficulty. On the other hand, it may be said, there can be but little more than the mere roots counted upon for the improvement of the soil, where the first crop is taken for hay, and the second for seed; and this, too necessarily limits you to the latest period for the performance of your ploughing for the fallow crop, thereby diminishing the chance for a timely preparation. Where clover is sown merely for the improvement of the land, and not intended to be cut at all, there is little doubt that the best time for ploughing it in, would be the summer twelve months after sowing it; but that seems to be an objectionable clover system, on more accounts than one, which affords neither hay or seed. The other practice, of cutting hay and ploughing the same year, has been practised by the best farmers on this river, and as they are more experienced, and have been more successful than myself, I cannot in justice but recommend their practice, in preference to my theory.

8. "What depth of ploughing is necessary where the soil does not exceed three or four inches?" As far as my experience has gone, the depth of ploughing should in all cases depend upon the character of the subsoil. Light soils, based on sterile sand, I would plough no deeper than the vegetable mould; but where clay is the foundation, and especially of that description which is fertilized by exposure to the atmosphere, I would bring up the largest possible proportion of it, that would leave the soil in undiminished productiveness by the mixture; nay, I should be inclined to increase the proportion to a small diminution of its immediate productiveness, for the sake of the great future amelioration. Upon all good wheat soils, the ploughing should be as deep as three horses can perform with the best constructed plough. I am sure I know of no upland soil, that would not be rendered entirely unproductive, for at least one year, by being ploughed eighteen inches or two feet; for although some of our clays become fertile, by exposure to the atmosphere, it requires the operation of at least one winter, for any sensible effect to be produced. It is, however, stated, that the celebrated Fellenburgh, whose scientific and agricultural establishment, at Hofwyl, has attracted so much attention throughout Europe, has ploughed two feet deep, with an implement requiring the power of fourteen horses. During my residence in the lower country, and in the course of my experiments on the sandy soils of that section of the state, I am satisfied that I did great and lasting injury to some land by ploughing it about six inches deep. This land was on a poor sandy foundation.

Having gotten through your queries, I will add, as succinctly as possible, my thoughts on a plan of husbandry, suited to the light sandy lands of the lower parts of the state. I should adopt a system excluding clover, because from the nature of your soil, and the generally reduced state of the land, the attempt at the field culture, upon a large scale, would be attended with no other result but the loss of your seed; and as summer fallows should only be practised as the concomitant of clover, those likewise I should consider as out of the scheme.

Assuming it as the basis of all good husbandry, that for every exhausting crop, there ought to be some counteracting improvement, I would cultivate no more land in corn than I could manure. This I think can be effected under a six-field rotation, which would reduce the quantity to be manured to one-sixth of the arable surface, and the succession of crops should be, first, corn; second, wheat; third, pasture; fourth, peas, and all leguminous crops; cotton, pumpkins and potatoes, might occupy a corner of this field; five, wheat; six, pasture.

The first, and most ostensible objection to this scheme, is the apparent small proportion of corn, not insuring a sufficiency of that necessary crop; and secondly, the difficulty of raising the required quantity of manure.—In answer, it may be said, that in the best cultivated counties of England, we are told, they manure as much as one-fourth of the arable surface yearly. It is true that some part of this manure is derived from other resources than those of the farm; to wit, their towns, manufactories and marl-pits; but the improvement derived from all these sources, I presume does not amount to the difference between one-sixth and one-quarter.—Besides, all the tide-water districts of Virginia abound in marl, so that, in this respect, you, in all probability, stand on an equal footing with the English farmers—and if all that labor, which is now bestowed on clearing land, and renewing our quick decaying fences, and other perishable improvements, which ought to be substituted by more permanent ones, were directed judiciously to the accumulation of the materials of fertility; digging marl, collecting rich earth from bottoms and swamps, those depots of nature, which are constantly, by the operation of natural causes, swallowing up the primest principles of fertility, to be added to the materials common to every farm; I am persuaded, we should find there would be less labor in collecting the means of fertilizing an acre, than in preparing it, from the forest state, and enclosing it for a crop.

An accurate statement in detail, of the relative expense of manuring an acre of land, and bringing one from the forest state into cultivation, is a desideratum as much called for in Virginia husbandry, as any that has ever occurred to my mind. If I am not much mistaken, it would prove, that less labor would be required to improve the lands throughout Virginia, than it has taken to reduce them to their present deteriorated state.

As to the objection that one-sixth part would be an insufficient portion of the arable land to have in corn, it may be replied, that that portion, manured at the rate of 20 or 25 loads, of 30 bushels each to the acre, would, on ordinary land, produce a double crop—and, therefore, would not only be equal to one-third, the proportion now usually put in corn, but would produce the clear saving of one half of the labor of cultivation, besides other almost incalculable advantages.

Upon your sandy soils, I think you might reduce the quantity of manure four or five loads to the acre, below what is necessary to produce the same result on the clay lands of the upper country, for light lands make a much better return, for a small quantity of manure, than stiff lands. I have increased the corn crop 100 per cent upon the ordinary high lands here, with 25 loads of 30 bushels each to the acre, which in their natural state would produce about two barrels. I am confident equal effects would be produced from 20 loads, upon the light soils of Prince George and Surry.

Where wheat is relied upon as the chief crop for market, as is contemplated in the foregoing scheme, the materials for manure would be very much increased—and the frequent recurrence of pasturage would be more than overbalanced by the additional comforts in living, and the profits to be derived from stock, which, with your facilities of communication with the best markets, ought to be no inconsiderable item in your annual income.

The field in peas, &c. would more than compensate for any contingent deficiency in the corn crop, leave something for market, and from the highly meliorating character of its crop, would be in a better state of preparation for wheat than any grass crop turned in, on sandy lands, that I know of. The offal of the products of this field, would contribute largely to the general fund of manure. And, until a system is devised to increase this fund to an adequate supply, for that field in the rotation which is in the most exhausting of all our crops, Indian corn, regular deterioration must be the consequence of our tillage. It is in vain to amuse ourselves with expedients; practical agriculturists will soon all agree that nothing short of a full manuring once in the rotation, will insure general and permanent improvement.

Accept the assurance of my high regard and esteem.

JOHN H COCKE.

To Edmund Ruffin, Esq.

[*From Chaptal's Chemistry applied to Agriculture.*]

OF NUTRITIVE MANURES.

The nutritive manures are those which contain juices or other substances, which, being dissolved in water, or otherwise divided to the most minute degree, are capable of being drawn into the organs of plants. Al. the vegetable and animal juices are of this description.

These substances are rarely employed in their natural state for the i-

ment of plants. It is generally considered preferable to allow them to putrify or ferment; the reason of this is simple. Besides the decomposition resulting from this operation, which renders the substances more soluble in water, the gases produced by it, such as the carbonic acid, the carburetted hydrogen, azote, and ammonia, furnish food for plants, or stimulant for their organs of digestion. It is not, however, well to prolong this decomposition too far; for if it be completed, there will remain only some fixed salts, mixed with those earths and juices which have resisted its action. Besides, the effect of manures, which have been entirely decomposed, is almost momentary, lasting but for a single season; whilst those which are employed before arriving at this state, continue to exert an influence for several years. In this last case, the decomposition, retarded by the separation of the manures into small portions, continues to go on gradually in the earth, and thus furnishes vegetation with its necessary aliments for a long time.

The excrements of animals, formed by the digestion of their food, have already undergone a decomposition which has disorganized the principles of their aliments, and in a greater or less degree changed their nature. The strength of the digestive organs, which varies in each species of animal, the difference of food, and the mixture of the digestive fluids furnished by the stomach, modify these manures to a very considerable extent.

The excrements of some animals, as of pigeons, fowls, &c., are employed without undergoing any new fermentation, because they consist mostly of salts, and contain but few juices. Fields are often manured with the excrements of sheep, collected in the sheep-folds, or scattered, as in parks, by the animals themselves upon the soil; but in general the dung of horses and of horned cattle is made to undergo a new fermentation before being applied as manure.

The most general method of producing the fermentation of the dung of quadrupeds, is, in the first place, to form upon the ground of sheep-folds and stables a bed of straw or dry leaves. This bed is covered with the solid excrements of the quadrupeds, and impregnated with their urine. At the end of fifteen days or a month, it is caried to a place suited for fermentation, and there formed anew, care being taken every day to spread upon it litter and the scatterings of the racks. The formation of these beds, contributes much to the healthfulness of the stables and to the cleanliness of the animals. When from a scarcity of straw, the beds can not be made of sufficient thickness, or renewed often enough, a layer may be formed of lime or gravel, broken fine and covered with straw. These earths will imbibe the urine, and when they are penetrated by it may be carried into the fields to be buried in the soil. The nature of the earth, upon which beds are formed in sheep-folds or stables, should vary according to the character of the soil which is to receive them, because, by attention to this, the soil may be improved as well as manured. For argillaceous and compact earths, the layers should be formed of gravel and the remains of old lime mortars; whilst those of fat marl or of clayey mud should be reserved for light and dry soils.

In some countries where good husbandry is much attended to, the floors of the stables are paved and slightly sloping, so that the urine flows off into a reservoir, where it is fermented with animal and vegetable substances, and used to water the fields at the moment when vegetation begins to be developed.

The art of fermenting dungs with litter is still very incomplete in some parts of France. In one place they let it decay till the straw is completely decomposed; in another they carry it into the fields as soon as it is taken from the stables. These two methods are equally faulty. By the first nearly all the gases and nutritive juices are dissipated and lost; by the second, fermentation, which can take place only in masses, will be but very imperfectly carrried on in the field, and the rains can convey to the plants only that portion of the nourishment afforded by manure, which they can obtain by a simple washing.

The most useful art perhaps in agriculture, and that which requires the most care, is the preparation of dungheaps. It requires the application of certain chemical principles, which it is not necessary for me to explain, since it is sufficient to point out to the agriculturist the rules by which he should be governed in his proceedings, without requiring of him an extensive knowledge of the theory upon which they are founded.

Solid substances, whether animal, vegetable, or mineral, do not enter into plants unless they are previously dissolved in water, or are drawn in with that fluid in a state of extreme division.

Animal and vegetable substances which are by their nature insoluble in water, may, by being decomposed, form new soluble compounds, capable of furnishing nourishment for plants.

Animal and vegetable substances deprived by the action of water of their soluble particles, may, in the course of their decomposition, form new compounds susceptible of being dissolved. Of this I have given instances in speaking of mould.

That which renders the art of employing dung-heaps difficult, in proportion as it is useful, is, that some methods which are adopted occasion the loss of a part of the manure. In fact when the clearings of the farm-yard are carried fresh into the fields, and applied immediately to the soil, vegetation is undoubtedly benefitted by the salts and the juices contained in them; but the fibres, the fatness, the oils, remain inactive in the earth; and their final decomposition is slow and imperfect. If, on the contrary, the collections of the farm-yard be heaped up in a corner of it, the mass will speedily become heated, carbonic acid gas will be evolved, and afterwards carburetted hydrogen, ammonia, azote, &c. A brown liquid, of which the colour deepens gradually almost to black, moistens the heap, and flows upon the ground around it; all is by degrees disorganized; and when the fermentation is completed, there remains only a residue composed of earthy and saline substances, mixed with a portion of blackened fibre, and some carbon in powder.

In those places where they do not allow fermentation to arrive to this degree of decomposition, they still lose, by mismanagement, a considerable part of their manure.

The most common method is, to deposit in a corner of the farm-yard the dung and litter, as it is drawn from the stables, adding to the mass every time these are cleared, and allowing it to ferment till the period of sowing arrives, whether it be in spring or autumn, when it is carried upon the fields requiring it.

This method presents many imperfections. In the first place, several successive layers being formed, no two of them can have undergone the same degree of fermentation; in some it will have gone on for six months, and in others but for fifteen days. In the second place, the heap, being exposed to rains, will, by frequent washings, have parted with nearly all its salts and soluble juices. In the third place, the extractive portions of the lower and central parts of the mass, the mucilage, the albumen, and the galatine, will be entirely decomposed; and, lastly, those gases which nourish plants, if developed at their roots, will have escaped into the air; and Davy has observed, that, by directing these emanations beneath the roots of the turf in a garden, the vegetation was rendered very superior to that in the vicinity.

How long should dunghills be allowed to ferment; and what methods ought to be pursued in forming them? This question leads us to cast a glance upon the nature of dunghills; and it is not till after having ascertained the difference amongst them, that it can be answered.

The principal parts of vegetables which are employed as manure contain mucilage, gelatine, oils, sugar, starch, extractive matter, and often albumen, acids, salts, &c. with an abundance of fibrous matter, insoluble in water.

The different substances afforded by animals, including all their excretions, are gelatine, fibrine, mucus, fat, albumen, urea, uric and phosphoric acids, and some salts.

The greatest part of the substances, constituting animals and vegetables, are soluble in water; and it is evident that in that state they can be employed as manures without previous fermentation; but it is necessary, that those which contain much insoluble matter should be decomposed by fermentation, because by that process their nature is changed, and they form new compounds, which, being capable of solution, can pass into the organs of plants.—*(To be Continued)*

TENTH ANNUAL FAIR OF THE AMERICAN INSTITUTE.

This exhibition of American productions will be held at Niblo's Garden, in the city of New-York, October 16, 1837.

Gold and Silver Medals, Diplomas, and other rewards, will be bestowed on the same liberal principles as on former occasions. Exhibitors are requested to deliver their articles at the garden on Friday, the 13th of October. Such as are intended for competition, must be brought on the 13th or 14th, that they may be arranged and examined before the opening for the admission of visitors, which will be on Monday, the 16th of October, at 12 o'clock.

The managers are gratified to be able to state, that notwithstanding the lamentable contrast between this and last year in the business affairs of our country, the applications from those intending to exhibit are as numerous as ever, evincing that the spirit of emulation has not yielded, but remains in full vigor, and promises, from the abundant resources of skill and invention, a display as ample and variegated as in seasons the most prosperous. The desolating revulsions of commerce have powerfully impressed our fellow-citizens with the necessity of clinging more closely to our own domestic resources, and of producing, by the aid of native genius and industry, those necessaries and conveniences requisite to competence, comfort and independence.

These considerations seem to have imparted fresh stimulus to ingenuity, and opened a brighter prospect of future improvement and display than ever. And why should not a reasoning, calculating, self-confiding people arrive at such conclusions? The elements of wealth remains unharmed by the revulsions of trade. Abundant harvests bear testimony that the laws of vegetation are beyond the influences of an unsound currency. The muscular, as well as the mental energies of a great and increasing nation of freemen, are unbroken Dormant industry, refreshed by a short repose, will start again, with accelerated motion and accumulated power. There is every where manifestations conclusive that we may safely rely on our own ample and independent resources. Our country, though in its infancy, presents a population sufficient for an empire more ingenious and more industrious than any other that has ever existed. With such a

people, and with a fertile territory embracing all climates, we cannot fail, with suitable incitements, to rival any and all other countries in the great work of improvement and civilization.

Well conducted public Fairs signally contribute to these results. Impressed with these views, the public, for nine successive years, have countenanced, cherished and supported the Exhibitions of the American Institute as their favorite institution, and we trust they will continue with their accustomed zeal to cherish and sustain it.

The farmer is invited to exhibit his useful implements, and the rare, curious and extraordinary productions of his agriculture culture. To the manufacturer and artist, we look for specimens of the choice productions of the factory and the workshop; and the innumerable varieties of taste and genius, mingled, as usual, with the ornamental and delicate workmanship of female hands. Appropriate places will be provided for all the varieties from every department of industry, whether minute or bulky, natural or artificial. Suitable preparations will also be made for enlivening the scene with the animating influences of moving machinery.

The friends of National Improvement throughout the country, are respectfully invited to join in this anniversary celebration of Industry and the Arts.

Managers.—T. B. Wakeman, Adoniram Chandler, Martin E. Thompson, John Mason, Edward T. Backhouse, James Hamilton, E. D. Plimpton, W. P. Disosway, Timothy Dewey, George Bacon, Dudley Marvin, John Sampson, of New-York; William Halsey, James Miller, Stephen Dod, of Newark, New-Jersey; Jeremiah Johnson, of Brooklyn, L. I.

OUTLINE OF THE FIRST PRINCIPLES OF HORTICULTURE.

BY JOHN LINDLEY, F. R. S., &c. &c.

(*Concluded from page* 123.)

XII. PERSPIRATION.

299. It is not, however, exclusively by the action of light and air that the nature of sap is altered. Evaporation is constantly going on during the growth of a plant, and sometimes is so copious, that an individual will perspire its own weight of water in the course of 24 hours.

300. The loss thus occasioned by the leaves is supplied by crude fluid, absorbed by the roots, and conveyed up the stem with great rapidity.

301. The consequence of such copious perspiration is the separation and solidification of the carbonized matter that is produced for the peculiar secretions of a species.

302. For the maintenance of a plant in health, it is indispensable that the supply of fluid by the roots should be continual and uninterrupted.

303. If any thing causes perspiration to take place faster than it can be counteracted by the absorption of fluid from the earth, plants will be dried up and perish.

304. Such causes are, destruction of spongioles, an insufficient quantity of fluid in the soil, an exposure of the spongioles to occasional dryness, and a dry atmosphere.

305. The most ready means of counteracting the evil consequences of an imperfect action of the roots is by preventing or diminishing evaporation.

306. This is to be effected by rendering the atmosphere extremely humid.

307. Thus, in curvilinear iron hot-houses, in which the atmosphere becomes so dry in consequence of the heat, that plants perish, it is necessary that the air should be rendered extremely humid, by throwing water upon the pavement, or by introducing steam.

308. And in transplantation in dry weather, evergreens, or plants in leaf, often die, because the spongioles are destroyed, or so far injured in the operation as to be unable to act, while the leaves never cease to perspire.

309. The greater certainty of transplanting plants that have been growing in pots is from this latter circumstance intelligible.

310. While the utility of putting cuttings or newly transplanted seedlings into a shady damp atmosphere, is explained by the necessity of hindering evaporation.

XIII. CUTTINGS.

311. When a separate portion of a plant is caused to produce new roots and branches, and to increase an individual, it is a cutting.

312. Cuttings are of two sorts—cuttings properly so called, and *eyes.* (319.)

313. A cutting consists of an internodium, or a part of one, with its nodus and leaf-bud.

314. When the internodium is plunged in the earth it attracts fluid from the soil, and nourishes the bud until it can feed itself.

315. The bud, feeding at first upon the matter in the internodium, gradually elongates upwards into a branch, and sends organized matter downwards, which becomes roots.

316. As soon as it has established a communication with the soil, it becomes a new individual, exactly like that from which it was taken.

317. As it is the action of the leaf-buds that causes growth in a cutting, t follows that no cutting without a leaf-bud will grow;

318. Unless the cutting has great vitality and power of forming adventi tious leaf-buds, (119.) which sometimes happens.

319. An eye is a leaf-bud without an internodium.

320 It only differs from a cutting in having no reservoir of food on which to exist, and in emitting its roots immediately from the base of the leaf-bud into the soil.

321. As cuttings will very often, if not always, develope leaves before any powerful connection is formed between them and the soil, they are peculiarly liable to suffer from perspiration.

322. Hence the importance of maintaining their atmosphere in an uniform state of humidity, as is effected by putting bell or other glasses over them.

323. In this case, however, it is necessary that if air-tight covers are employed, such as bell glasses, they should be from time to time removed and replaced, for the sake of getting rid of excessive humidity.

324. Layers differ from cuttings in nothing except that they strike root into the soil while yet adhering to the parent plant.

325. Whatever is true of cuttings is true of layers, except that the latter are not liable to suffer by evaporation, because of their communication with the parent plant.

326. As cuttings strike roots into the earth by the action of leaves or leaf-buds, it might be supposed that they will strike most readily when the leaves or leaf-buds are in their greatest vigor.

327. Nevertheless, this power is controlled so much by the peculiar vital powers of different species, and by secondary considerations, that it is impossible to say that this is an absolute rule.

328. Thus Dahlias and other herbaceous plants will strike root freely when cuttings are very young; and Heaths, Azaleas, and other hard wooded plants, only when the wood has just begun to harden.

329. The former is, probably, owing to some specific vital excitability, the force of which we cannot appreciate; the latter either to a kind of torpor, which seems to seize such plants when their tissue is once emptied of fluid, or to a natural slowness to send downwards woody matter, whether for wood or not, which is the real cause of their wood being harder.

330. If ripened cuttings are upon the whole the most fitted for multiplication, it is because their tissue is less absorbent than when younger, and that they are less likely to suffer either from repletion or evaporation.

331. For, to gorge tissue with food, before leaves are in action to decompose and assimilate it, is as prejudicial as to empty tissue by the action of leaves, before spongioles are prepared to replenish it.

332. For this reason pure silex, in which no stimulating substances are contained (silver sand,) is the best adapted for promoting the rooting of cuttings that strike with difficulty.

333. And for the same reason, cuttings with what gardeners call a *heel* to them, or a piece of the older wood, strike root more readily than such as are not so protected. The greater age of the tissue of the heel renders it less absorbent than tissue that is altogether newly formed.

334. It is to avoid the bad effect of evaporation that leaves are usually for the most part removed from a cutting, when it is first prepared.

XIV. SCIONS.

335. A scion is a cutting (311.) which is caused to grow upon another plant, and not in earth.

336. Scions are of two sorts, scions properly so called, and *buds* (354.)

337. Whatever is true of cuttings is true also of scions, all circumstances being equal.

338. When a scion is adapted to another plant, it attracts fluid from it for the nourishment of its leaf-buds until they can feed themselves.

339. Its buds thus fed gradually grow upwards into branches, and send woody matter downwards, which is analogous to roots.

340. At the same time the cellular substance of the scion and its *stock* adheres (19.) so as to form a complete organic union.

341. The woody matter descending from the bud passes through the cellular substance into the stock, where it occupies the same situation as would have been occupied by woody matter supplied by buds belonging to the stock itself.

342. Once united, the scion covers the wood of the stock with new wood, and causes the production of new roots.

343. But the character of the woody matter sent down by the scion over the wood of the stock being determined by the cellular substance, which has exclusively a horizontal developement, (73.) it follows that the wood of the stock will always remain apparently the same, although it is furnished by the scion

344. Some scions will grow upon a stock without being able to transmit any woody matter into it; as some Cacti.

345. When this happens, the adhesion of the two takes place by the cellular substance only, and the union is so imperfect that a slight degree of violence suffices to dissever them.

346. And in such cases the buds are fed by their woody matter, which absorbs the ascending sap from the stock at the point where the adhesion has occurred; and the latter, never augmenting in diameter, is finally overgrown by the scion.

347. When, in such instances, the communication between the stock and the scion is so much interrupted that the sap can no longer ascend with sufficient rapidity into the branches, the latter die: as in many peaches.

348. This incomplete union between the scion and its stock is owing to some constitutional or organic difference in the two.

349. Therefore care should be taken that when plants are grafted on one another, their constitution should be as nearly as possible identical.

350. As adhesion of only an imperfect nature takes place when the scion and stock are, to a certain degree, dissimilar in constitution, so will no adhesion whatever occur when their constitutional differences are very decided.

351. Hence it is only species very nearly allied in nature that can be grafted on each other.

352. As only similar tissues will unite (19.) it is necessary in applying a scion to the stock, that similar parts should be carefully adapted to each other; as bark to bark, cambium to cambium, and alburnum to alburnum.

353. The second is more especially requisite, because it is through the cambium that the woody matter sent downwards by the buds must pass; and also because cambium itself, being organizing matter in an incipient state, will more readily form an adhesion than any other part.

354. The same principles apply to *buds*, which are to scions precisely what eyes (319.) are to cuttings.

355. Inarching is the same with reference to grafting that layering (324.) is with reference to striking by cuttings.

356. It serves to maintain the vitality of a scion until it can form an adhesion with its stock; and must be considered the most certain mode of grafting.

357. It is probable that every species of flowering plant, without exception, may be multiplied by grafting.

358. Nevertheless, there are many species and even tribes that never have been grafted.

359. It has been found that in the vine and the walnut this difficulty can be overcome by attention to their peculiar constitutions; and it is probable that the same attention will remove supposed difficulties in the case of other species.

XV. TRANSPLANTATION.

360. Transplantation consists in removing a plant from the soil in which it is growing to some other soil.

361. If, in the operation, the plant is torpid, and its spongioles uninjured, the removal will not be productive of any interruption to the previous rate of growth.

362. And if it is growing, or evergreen, and the spongioles are uninjured, the removal will produce no further injury than may arise from the temporary suspension of the action of the spongioles, and the noncessation of perspiration during the operation.

363. So that transplantation may take place at all seasons of the year, and under all circumstances, provided the spongioles are uninjured.

364. This applies to the largest trees as well as to the smallest herbs.

365. But as it is impossible to take plants out of the earth without destroying or injuring the spongioles, the evil consequences of such accidents must be remedied by the hindrance of evaporation.

366. Transplantation should, therefore, take place only when plants are torpid, and when their respiratory organs (leaves) are absent; or, if they never lose those organs, as evergreens, only at seasons when the atmosphere is periodically charged with humidity for some considerable time.

367. Old trees in which the ro ts are much injured, form new ones so slowly, that they are very liable to be exhausted of sap by the absorption of their very numerous young buds before new spongioles can be formed.

368. The amputation of all their upper extremities is the most probable prevention of death; but in most cases injury of their roots is without a remedy.

369. Plants in pots being so circumstanced that the spongioles are protected from injury, can, however, be transplanted at all seasons, without any dangerous consequences.

CATTLE SALE AT POWELTON.

[*From the Philadelphia National Gazette.*]

Our agriculture readers will doubtless be gratified to learn some parti culars respecting the extensive sale of cattle, which took place on the 12th inst. at Powelton, and therefore we give them the following details, for which we are indebted to the courtesy of the auctioneers, Messrs. Thomas & Son. Upwards of two thousand persons were present on the occasion. Of the amounts as near as can be ascertained, about $4,400 were purchased for and by gentlemen of Ohio; $3,600 by gentlemen of Virginia; and $4,000 by those of Philadelphia city and county; but it is not known at present exactly from what parts of the Union were the other purchasers, though they came from all directions. The bidding for the cows was very spirited, prices rather exceeding the expectation of the owners; for the bulls, however, they fell short, making altogether a good average sale. Full bred cows are comparatively scarce, and accordingly they brought superior prices. The following is a correct report of the sale:

COWS.			BULLS.		
Name.	*Age.*	*Amount.*	*Name.*	*Age.*	*Amount.*
Ruth,	6 years old.	$360	Hector,	2 years old.	$175
Adelaide,	6 "	490	Sir Robert,	2 "	350
Minna,	5 "	520	Melbourne,	2 "	320
Lucilla,	5 "	480	Maxwell,	1 "	400
Empress,	5 "	420	Llewellyn,	1 "	210
Brighteyes,	4 "	490	Colostro,	1 "	260
Beauty,	4 "	540	Miser,	1 "	470
Vermillion,	4 "	430	Brutus,	1 "	330
Nonsuch,	3 "	410	Delight,	1 "	370
Media,	3 "	380	P. of Wales,	1 "	310
Ruby,	3 "	370	Lord Fairfax	1 "	250
Mayflower,	3 "	515	Bruce,	1 "	360
Profitable,	3 "	550	Primo,	1 "	310
Clarkville,	2 "	630	Nimrod,	2 "	470
Virginia,	2 "	690	Colossus,	3 "	310
Woodbine,	2 "	400			
Belicia,	1 "	450			$14,305
Celebrity,	3 "	480			
Isabella,	5 "	405			
		$9,110			

Sheep.

2 Bakewell breed, $100 each, $200
5 do do 95 do 475

Total,..... $14,980

The above are all from Mr Whittaker, with the exception of the last, the cow Isabella.

The following belonged to other owners, and were not in the printed catalogue:

A Spanish Jack,.....	$290	A Heifer, ...	$160
A Jennet and Colt,...	210	Dido,.....	75
Fitzroslin,.....	200		

Department of Health.

HINTS TO PARENTS AND THE SCHOOL-MASTER.

[*Extracts from the Economy of Health.*]

THIRD SEPTENNIAD—(14 to 21.)

Dangers of the third septenniad—The third septenniad is indeed the spring of life. In it the seeds of good or evil, of virtue or vice, of science or ignorance, are sown. In it the physical functions act with boundless energy—the human frame expanding and taking on its form and dimensions; while the mental powers display, in the great majority of instances, their characteristic features, capacities and propensities. It is in this stage of rapid development, intellectual and corporeal, that the greatest difficulty exists in preserving the *physique* within the boundaries of health, and confining the *morale* within the limits of virtue. How many minds are wrecked how many constitutions ruined, during this septenniad!! The extent of the mischief,—even of the moral evil, is less known to the priest than to the physician. At so early a period of life, when passions so much predominate over principles, it is not to be expected that the force of precept can be so efficiently a preventive as the fear of bodily suffering. If the youth of both sexes could see through the vista of future years, and there behold the catalogue of afflictions and sufferings inseparable attendants on time and humanity, they would pause, ere they added to the number, by originating maladies when nature is endeavoring to fortify the material fabric against the influence of those that must necessarily assail us in the progress of life! Yet it is in this very epoch that some of the most deadly seeds of vice and disease are implanted in our spiritual and corporeal constitutions—seeds which not merely "grow with our growth," but acquire vigor from our weakness, and obtain victory in our decay. This melancholy reflection is applicable to all classes and both sexes. The plebeian is not secured from the evil by poverty—nor the patrician by wealth. Neither are the middle classes protected by the golden mean in which they are supposed to be placed. Civilization has decreed, and society has sanctioned the fiat, that youth, during the third septenniad, shall experience much more tribulation of mind, and affliction of body, than was designed for it by nature or nature's God. The sedentary and insalutary avocations to which young people of both sexes, in the middle and lower classes of society, are confined, between the ages of fourteen and twenty-one, occasion dreadful havoc in health, and no small deterioration of morals. The drudgery, the scanty clothing, the bad food, and the exposure to the elements, of the most indigent classes, are scarcely more injurious to health and life, than the sedentary habits, the impure air, and the depressing passions of the various species of artizans, mechanics and shop-keepers in the classes immediately above them. * * Large as is the class to which I have been aliuding, it is as a drop of water in the ocean compared to the myriads of youth, male and female, pent up in the foul atmospheres of our countless factories, inhaling alike the moral and physical poison, that corrupts the mind, while its enervates the body. * * * Youth, manhood, decripitude and decay, are the destiny of kingdoms as well as of individuals. The BODY POLITIC is subject to the same phases, revolutions, disorders and decay, as the human body. * * Nations are only aggregations of individuals; and whatever be the influence, whether good or evil, that operates on a considerable number of the

population, that influence will radiate from ten thousand centres, and diffuse its effects, sooner or later, over the whole surface of society.

Over-exertion of the mind.—[In alluding to the *few* who enter our colleges, &c. and engage in the "fierce conflict for honors," our author adds,]—How often is the laurel converted into the cypress, to wave over the tomb of talent, or over the living wreck of mind and body! How often is the ship foundered, on this her first voyage, by carrying a press of sail that strained, bent, and sprung those masts, yards, and stays, which would have carried the vessel, under ordinary circumstances, through the various storms of life! To those who are not well acquainted with the intimate connexion between mind and matter, in this state of our existence, the almost *mechanical* influences to which the immaterial principle is subject, may appear incredible, and somewhat humiliating. Thus, the intellect may be, and every day is, stretched like a ligamant or muscle, till it snaps, or loses its elasticity and contractibility, and, for a time at least, becomes incapable of its ordinary functions. The human mind is exhausted by protracted thinking, in the same manner as the human body is exhausted by long-continued labor; but it is not so easily recruited by rest, still less by cordials.

Classics and mathematics.—In our universities, two channels are open to distinction—through classics and mathematics; or, in other words, through the paths of literature and science. The *former* is the most ornamental—the *latter* most useful. The one expands the imagination, the other fortifies the judgment. A moderate combination of the two would appear to be preferable to a high proficiency in any one of the branches. * * *Classical* refreshes the intellect, and gives wings to the fancy, after the dry problems and rigorous demonstrations of *geometry;* the *latter*, in turn, corrects the wanderings of the imagination among the fairy and fictitious scenes of poetry and mythology—brings back our thoughts to the sober truths of exact science, and disciplines the mind by the exercise of the judgment.

The master passions.—It is in the third septenniad that some of the PASSIONS, and many of the PROPENSITIES, dawn forth, and even take root. Previous to that period, when the appetite for food, drink, pastimes, exercise and sight-seeings are gratified, the youth falls into profound repose, to awake with renovated vigor for running the same round of enjoyments as before. But, in the third septenniad, a stranger appears upon the stage and soon assumes the leading character in the dramatis personæ—a character which he often sustains till the ninth, or even the tenth septenniad. I need hardly say that this passion is LOVE. It precedes and overrules the other master passions—as ambition, avarice, &c. which, at this early period of life, are represented by substitutes (emulation and economy) rather than actual occupants of the human microcosm. These three grand passions—LOVE, AMBITION, and AVARICE—are at all times antagonizing powers. Love is first in the field—and generally the first to quit the arena of contention. Ambition is the second in action, and the second to relinguish the struggle. Avarice is the youngest, that is, the latest born, and generally survives the other two.

Want of exercise in woman.—It is in the course of the third septenniad that the seeds of female diseases are chiefly sown—or, at least, that the soil is specially prepared for their reception and growth. The predisposition to infirmities and disorders of various kinds is effected by acts of OMISSION and COMMISSION. In the first class, need I mention the deficiency of healthy exercise of the body in the open air, and of intellectual exercise in judicious studies? We are told by mothers, that, in towns and cities, it is impossible for young females to take bodily exercise. Where there is the WILL, there will generally be found the MEANS. Even within the precincts of home, the hoop and the skip-rope might usefully supersede the harp and the guitar for one hour in a day. Gymnastic exercises have been hastily thrown aside—partly because some enthusiasts carried them to excess—partly because they were supposed to be inimical to the effeminacy of shape and features so much prized by parent and progeny—but chiefly, I suspect, from that languor and disinclination to exertion, which characterise the higher and even the middle classes of female youth. This deficiency of exercise in the open air may be considered the parent of one-half of female disorders, by multiplying and augmenting the susceptibilities to all external impressions. The pallid complexions, the languid movements, the torpid secretions, the flaccid muscles, and disordered functions, (including glandular swellings,) and consumption itself, attest the truth of this assertion.

Their clothing.—Insufficiency of exercise is greatly aided by scantiness of clothing. Among the poor, this evil is a misfortune, rather than a fault—among the rich it is a fault as well as a misfortune.

Lacing.—It is hardly necessary to state, that the vital function of respiration can only be carried on by the alternate expansion and contraction of the lungs. This apparatus cannot be filled with atmospheric air, except by the elevation of the ribs, or the descent of the diaphragm. In health, and in a state of nature, both these mechanical processes are employed, and then the individual derives all the advantages which free breathing can impart to the whole economy of the constitution. In certain diseases respiration can only be performed by *one* of these processes—but then it is carried on imperfectly and laboriously. Thus, when ribs are fractured, the chest must be secured from motion by bandages, and breathing is performed by the descent and ascent of the diaphragm. But how is it when both of these mechanical processes are crippled at the same time? Thus, in fashionable female attire, (and often in male attire also,) the abdomen is so compressed by the stays, that the diaphragm can only descend in the slightest degree—if at all—while the whole of the middle and lower part of the chest is so firmly girt by the same cincture, that the ribs then are kept motionless! The vital function of respiration, then, is carried on by a violent, though inefficient, effort of the diaphragm to descend, and by an excessive action of the muscles, and extraordinary elevation of the ribs in the upper part of the chest, where it is free from the pressure of the stays. Now, in this state of things, three distinct injuries are sustained, or injurious operations carried on. *First*, the too great pressure of the diaphragm on the stomach and upper bowels, by its violent efforts to descend: *secondly*, the *inaction* of the lower lobes of the lungs, from want of space for expansion: and *thirdly*, the *inordinate dilation* of the upper portions of the lungs, when the ribs are free, in order to compensate for the compressed state of the lower portions. All these injurious effects are greatly increased by muscular exertion—as by dancing, singing, &c. when the circulation is hurried, yet impeded; and when demands are made upon respiration which the lungs are incapable of supplying. It is at those times we see the upper part of the chest heaving with almost convulsive throes, and the countenance flushed by the impediments thrown in the way of the blood's return to the heart.

It is not a little remarkable, that, in nine-tenths of those who die of consumption, we find that the upper lobes of the lungs, corresponding with those of the chest that are most exposed to the atmosphere, least compressed by clothing, and more than usually strained in breathing, are the seat of excavations, commonly termed ulcerations, while the lower lobes of the lungs are generally found to be more or less consolidated, and comparatively impervious to air. * * These are not the only evils. The stomach and bowels are so compressed, that it is wonderful how they are able to perform their important functions at all! But although the resources of nature are almost inexhaustible in overcoming obstacles, yet the injurious effects of the habit alluded to, are numerous and potent enough to swell, very materially, the long catalogue of nervous and dyspeptic complaints. The growth of the whole body, and the freedom of all its functions, so much depend upon perfect digestion of our food, and conversion of our nutriment into healthy blood, that any impediment to that digestion, and that assimilation, must inevitably derange the whole constitution.

Matrimony.—There is one other evil, of commission, that I must advert to before closing this section—the commission of matrimony. I fear that many of my fair young readers may think I have placed this evil under the wrong head, and that it ought to be considered one of *omission* rather than commission. I am unable, in an essay of this kind, to state my reasons for postponing matrimony till the completion of the third septenniad in the female, and of the fourth septenniad in the male sex. Yet both sexes may safely take it for granted, that I have good reasons for advancing this dogma—deduced from long experience and extensive observation. To the male youth of modern times the admonition is hardly necessary, since they are growing amazingly prudent and cautious in taking this important step. In all matrimonial affairs they require the spur rather than the bridle, and therefore I may take leave of them for the present, as they are not likely to violate the precept I have laid down.

Not so the young ladies—or rather their mothers. But I shall only offer to them one dissuasive argument against too early matrimony. It is this:—that for every month spent in the marriage state during the third septenniad, a year will be deducted from the usual duration of their beauty and personal attractions! I ought not to say less—and I need not say more.

PRICE CURRENT.

ARTICLES.	New-York. Sept. 23.	Boston. Sept. 20.	Philadel'a. Sept. 18.	Baltimore. Sept. 19.
Beans white, bush.....	2 00.. 2 25	1 37.. 1 75	1 37..1 62	1 25..1 50
Beef, best, cwt.....	6 00.. 7 50	5 00.. 6 50	7 00..8 00	6 50..7 50
Pork, per cwt.....	7 00.. 9 00	7 00.. 9 00	8 00..11 00	6 00..7 50
Butter, fresh, pound, ...	18.. 22	20.. 25	13.. 14	20.. 25
Cheese, pound, ...	8.. 13	9.. 13	10.. 11	9.. 10
Flour, best, bbl.....	8 00.. 9 25	8 00..11 00	8 12..8 75	8 25..9 37
GRAIN—Wheat, bushel, ..	1 30.. 1 70	....	1 60..1 80	1 50..1 80
Rye, do. ..	91.. 1 00	90.. 1 00	80..	.. 65
Oats, do. ..	40.. 50	75.. 78	.. 43	32.. 00
Corn, do. ..	1 04.. 1 06	93.. 1 06	1 00..1 00	93.. 95
SEEDS—Red Clover, lb...	13	13.. 14	9.. 11	7¼.. 8¼
Timothy, bushel,.	2 50.. 2 75	2 75.. 3 00	2 00..3 25	3 50..4 00
WOOL—Saxony, fleece, lb.	75.. 80	65.. 70	65.. 73	40.. 50
Merino, lb..... .	50.. 68	40.. 65	50.. 62	25.. 40
1-4 and com. lb...	40.. 60	40.. 45	40.. 44	28.. 30
Sheep, ...	2 50.. 5 00	1 67.. 3 00		
Cows and Calves,.....	22 00..42 00	23 00..42 00		30 0..40 0
Cotton,.....	7.. 12	....	9.. 12	10.. 13

FROM THE STEAM PRESS OF PACKARD & VAN BENTHUYSEN.